SONY

3-066-743-**12**(1)

Digital Still Camera

Operating Instructions

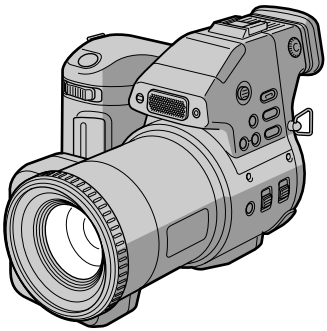
Before operating the unit, please read this manual thoroughly, and retain it for future reference.

Owner's Record

The model and serial numbers are located on the bottom. Record the serial number in the space provided below. Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. _____

Serial No. _____



MVC-FD97

FD Mavica

InfoLITHIUM L SERIES

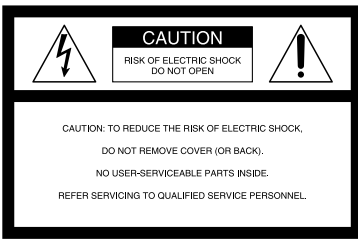
MEMORY STICK ™

©2001 Sony Corporation

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

For the Customers in the U.S.A.



This symbol is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

If you have any questions about this product, you may call:
Sony Customer Information Center
1-800-222-SONY (7669)
The number below is for the FCC related matters only.

Regulatory Information

Declaration of Conformity

Trade Name:	SONY
Model No.:	MVC-FD97
Responsible Party:	Sony Electronics Inc.
Address:	1 Sony Drive, Park Ridge, NJ, 07656 USA
Telephone No.:	201-930-6972

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CAUTION

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

Note:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

— Reorient or relocate the receiving antenna.
— Increase the separation between the equipment and receiver.
— Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
— Consult the dealer or an experienced radio/TV technician for help.

The supplied interface cable must be used with the equipment in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

For the Customers in the U.S.A. and Canada

DISPOSAL OF LITHIUM ION BATTERY.

LITHIUM ION BATTERY.

DISPOSE OF PROPERLY.

You can return your unwanted lithium ion batteries to your nearest Sony Service Center or Factory Service Center.

Note:
In some areas the disposal of lithium ion batteries in household or business trash may be prohibited.

For the Sony Service Center nearest you call 1-800-222-SONY (United States only)
For the Sony Factory Service Center nearest you call 416-499-SONY (Canada only)

Caution:
Do not handle damaged or leaking lithium ion battery.

For the Customers in Canada

CAUTION
TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS POLARIZED AC PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

NOTICE FOR THE CUSTOMERS IN THE UNITED KINGDOM

A moulded plug complying with BS 1363 is fitted to this equipment for your safety and convenience.

Should the fuse in the plug supplied need to be replaced, a 5 AMP fuse approved by ASTA or BSI to BS 1362, (i.e. marked with ♡ or ◈ mark) must be used.

If the plug supplied with this equipment has a detachable fuse cover, be sure to attach the fuse cover after you change the fuse. Never use the plug without the fuse cover. If you should lose the fuse cover, please contact your nearest Sony service station.

For the Customers in Germany

Directive:EMC Directive 89/336/EEC.92/31/EEC
This equipment complies with the EMC regulations when used under the following circumstances:
• Residential area
• Business district
• Light-industry district
(This equipment complies with the EMC standard regulations EN55022 Class B.)

Attention for the Customers in Europe

This product has been tested and found compliant with the limits sets out on the EMC Directive for using connection cables shorter than 3 meters (9.8 feet).

The electromagnetic fields at the specific frequencies may influence the picture and sound of this camera.

Be sure to read the following before using your camera

Operating instructions

Before operating the unit, please read this manual thoroughly, and retain it for future reference.
As you read through this manual, buttons and settings on the camera are shown in capital letters.
e.g. Press DISPLAY.

Trial recording

Before you record one-time events, you may want to make a trial recording to make sure that the camera is working correctly.

No compensation for contents of the recording

Contents of the recording cannot be compensated for if recording or playback is not made due to a malfunction of your camera or recording medium, etc.

Notes on image data compatibility of the "Memory Stick"

- This camera conforms with the Design rule for Camera File system universal standard established by the JEITA (Japan Electrics and Information Technology Industries Association). You cannot play back on your camera still images recorded on other equipment (DCR-TRV890E/TRV900/TRV900E, DSC-D700, DSC-D770) that does not conform with this universal standard. (These models are not sold in some areas.)
- Playback of images recorded with your camera on other equipment and playback of images recorded or edited with other equipment on your camera are not guaranteed.

Precaution on copyright

Television programs, films, video tapes, and other materials may be copyrighted. Unauthorized recording of such materials may be contrary to the provision of the copyright laws.

Do not shake or strike the camera

In addition to malfunctions and inability to record images, this may render the floppy disks or "Memory Stick"s unusable or image data breakdown, damage or loss may occur.

LCD screen, finder (only models with a finder) and lens

- The LCD screen and the finder are manufactured using extremely high-precision technology so over 99.99% of the pixels are operational for effective use. However, there may be some tiny black points and/or bright points (white, red, blue or green in color) that constantly appear on the LCD screen and the finder. These points are normal in the manufacturing process and do not affect the recording in any way.
- Be careful when placing the camera near a window or outdoors. Exposing the LCD screen, the finder or the lens to direct sunlight for long periods may cause malfunctions.

Do not get the camera wet

When taking pictures outdoors in the rain or under similar conditions, be careful not to get the camera wet. If moisture condensation occurs, refer to page 74 and follow the instructions on how to remove it before using the camera.

Back up recommendation

To avoid the potential risk of data loss, always copy (back up) data to a disk.

When the camera is used for long periods

Note that the camera body may become hot.

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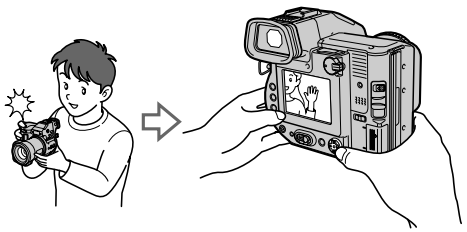
Deletes undesired images right away, checking the image after shooting

The digital still camera is able to play back the image and delete it right away.

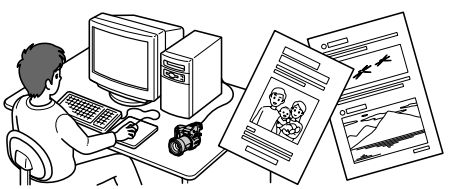
Recording still images: page 18
Playing back still images: page 26
Deleting images (DELETE): page 66



Captures images with your computer

You can easily copy images onto your computer using a floppy disk or a “Memory Stick,” and view and modify images on your computer using application software.

Viewing images using a computer: page 29



Records a moving picture with audio

The digital still camera can record a moving picture with audio for maximum 60 seconds.

Recording moving images: page 25

Selects the recording mode from various types of recordings according to your situation

Creating Clip Motion Files: page 49
Recording still images for e-mail (E-MAIL): page 51
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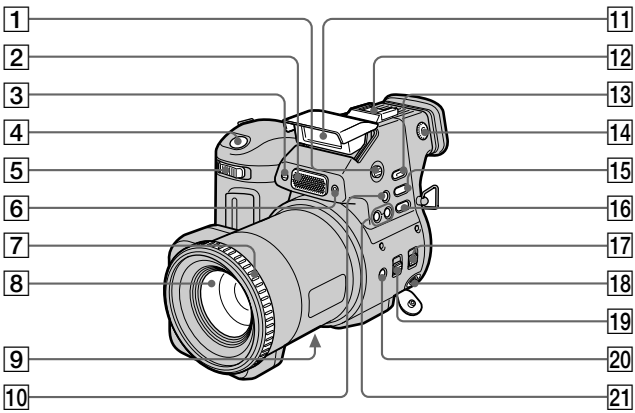
Identifying the parts

See the pages in parentheses for details of operation.



1 **OPEN (FLASH) button (23)**

2 **Built-in microphone**
Do not touch while recording.

3 **Self-timer lamp (23)**

4 **Shutter button (18, 25)**

5 **Zoom lever (21)**

6 **Photocell window for flash**
Do not block while recording.

7 **Focus ring (55)**

8 **Lens**

9 **DC IN cover/DC IN jack (10, 13)**

10 **(One-push white balance) button (59)**

11 **Flash (23)**

12 **Accessory shoe**

13 **SPOT METER button (57)**

14 **Finder adjustment dial (19)**

15 **WHITE BALANCE button (59)**

16 **PROGRAM AE button (56)**

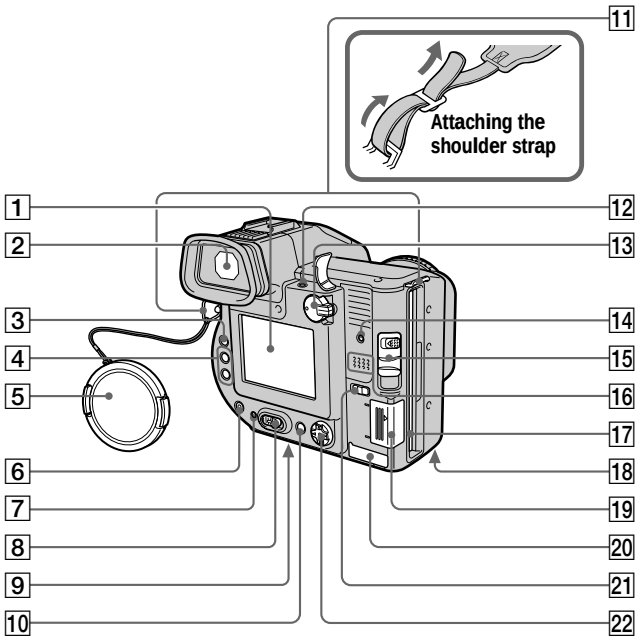
17 **STEADY SHOT ON/OFF switch (22)**

18 **A/V OUT (MONO) jack (64)**
Audio output is monaural.

19 **FOCUS AUTO/MANUAL switch (54, 55)**

20 **(Macro) button (54)**

21 **PROGRAM AE +/– buttons (56)**



1 **LCD screen**

2 **Finder (19)**

3 **LCD ON/OFF switch (20)**

4 **VOL +/– buttons (28)**

5 **Lens cap (supplied)**

6 **ϟ (Flash) button/ ϟ (Flash) lamp (23)**

7 **POWER ON/OFF (CHG) (Charge) lamp (11, 14)**

8 **POWER switch (14)**

9 **Tripod receptacle (bottom surface)**
Use a tripod with a screw length of less than 6.5 mm (7/32 inch). You cannot firmly secure the camera to tripods having longer screws, and may damage the camera.

10 **DISPLAY button (22)**

11 **Hooks for strap**

12 **ACC (Accessory) jack**

13 **PLAY/STILL/MOVIE selector (40)**

14 **Access lamp (18, 19)**

15 **DISK EJECT lever (16)**

16 **Speaker**

17 **Floppy disk slot (16)**

18 **Battery cover/PUSH button (bottom surface) (9)**

19 **“Memory Stick” cover/ “Memory Stick” slot (17)**

20 **USB cover/USB jack (31)**

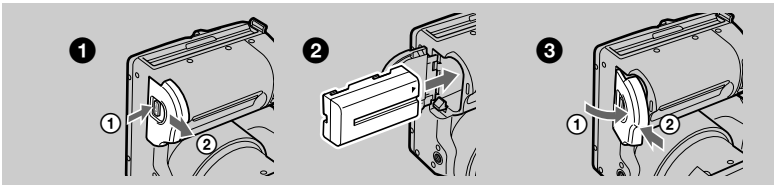
21 **MS /FD (“Memory Stick”/floppy disk) selector**

22 **Control button (40)**

Preparing the power supply

Installing the battery pack

Your camera operates only with the NP-F330 (supplied)/F550 (not supplied) “InfoLITHIUM” battery pack* (L series). See page 77 for more information about “InfoLITHIUM” battery pack.



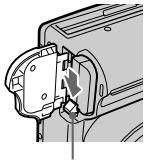
1 Open the battery cover.
Slide the battery cover in the direction of the arrow while pressing the PUSH button.

2 Install the battery pack.
Insert the battery pack with the ▲ mark facing toward the battery compartment as illustrated.

3 Close the battery cover.

To remove the battery pack

Open the battery cover. Slide the battery eject lever rightward, and remove the battery pack.
Be careful not to drop the battery pack when removing it.

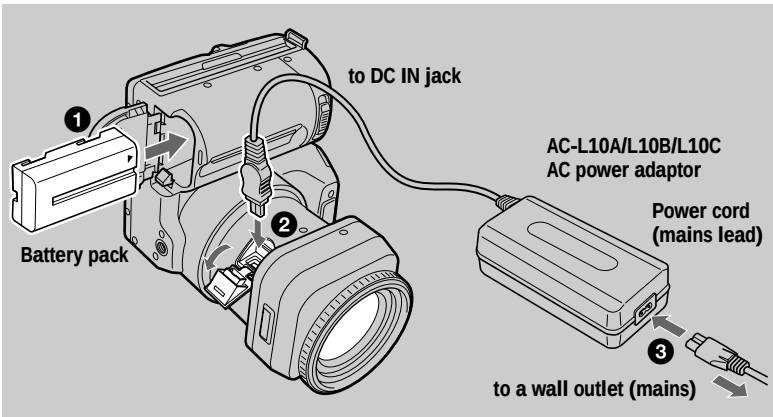


**** What is “InfoLITHIUM”?***

“InfoLITHIUM” is a lithium ion battery pack which can exchange information such as battery consumption with compatible video equipment. “InfoLITHIUM” L series battery packs have the mark. “InfoLITHIUM” is a trademark of Sony Corporation.

Charging the battery pack

When the camera is turned on, you cannot charge the battery pack. Be sure to turn off the power of the camera.



1 Insert the battery pack into your camera.

2 Open the DC IN cover and connect the AC power adaptor to the DC IN jack of your camera with the ▲ mark facing up.

3 Connect the power cord (mains lead) to the AC power adaptor and then to a wall outlet (mains).
The POWER ON/OFF (CHG) lamp (orange) below the LCD screen lights up when charging begins. When the POWER ON/OFF (CHG) lamp goes off, **full charge** is completed.

After charging the battery pack

Disconnect the AC power adaptor from the DC IN jack on your camera.

Battery remaining indicator

The LCD screen or finder on the camera shows the remaining time for which you can still record or play back images.
This indication may not be entirely accurate depending on the conditions of use and the operating environment.
Charging at a room temperature of 10°C to 30°C (50°F to 86°F) is recommended.

NP-F330 (supplied)/F550 (not supplied) battery pack

When you record images in an extremely cold location or using the LCD screen, the operating time becomes short. When using the camera in an extremely cold location, place the battery pack in your pocket or other place to keep it warm, then insert the battery pack into the camera just before recording. When using a pocket heater, take care not to let the heater directly contact the battery.

Auto power-off function

If you do not operate the camera for about three minutes during recording, the camera turns off automatically to prevent wearing down the battery pack. To use the camera again, slide the POWER switch to the right to turn on the camera again.

Note on the POWER ON/OFF (CHG) lamp during charging

The POWER ON/OFF (CHG) lamp may flash:

- When a malfunction occurs in the battery pack (page 84).

The POWER ON/OFF (CHG) lamp does not light up:

- When the battery pack is not installed properly.

Charging time

Battery pack	Full charge (min.)
NP-F330 (supplied)	Approx. 150
NP-F550	Approx. 210

Approximate time to charge a completely discharged battery pack at a temperature of 25°C (77°F).

Battery life and number of images that can be recorded/played back

STILL mode recording/playback when using floppy disks

	NP-F330 (supplied)		NP-F550	
	Battery life (min.)	Number of images	Battery life (min.)	Number of images
Continuous recording*	Approx. 65	Approx. 650	Approx. 150	Approx. 1600
Continuous playback**	Approx. 80	Approx. 2200	Approx. 170	Approx. 4800

STILL mode recording/playback when using "Memory Stick"s

	NP-F330 (supplied)		NP-F550	
	Battery life (min.)	Number of images	Battery life (min.)	Number of images
Continuous recording*	Approx. 80	Approx. 1600	Approx. 170	Approx. 3400
Continuous playback**	Approx. 100	Approx. 3000	Approx. 230	Approx. 6900

Approximate battery life and number of images that can be recorded/played back at a temperature of 25°C (77°F) with a fully charged battery pack, 640×480 image size and in NORMAL recording mode.

* Recording at about 5-second intervals when using a floppy disk, or at about 3-second intervals when using a "Memory Stick"

** Playing back single images continuously at about 2-second intervals

MOVIE mode recording when using floppy disks

	NP-F330 (supplied)	NP-F550
	Battery life (min.)	Battery life (min.)
Continuous recording	Approx. 85	Approx. 180

MOVIE mode recording when using "Memory Stick"s

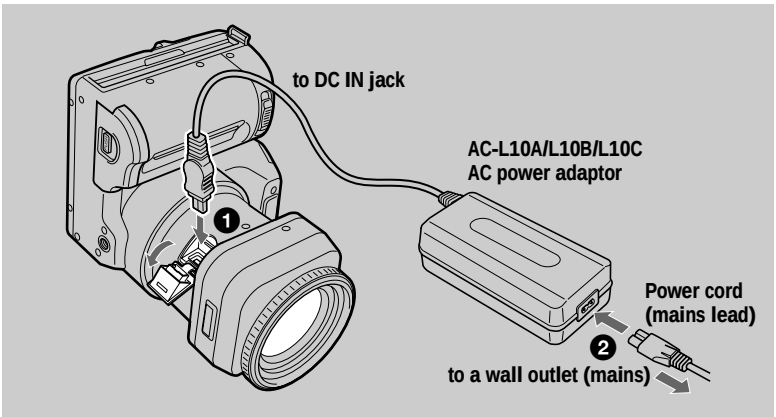
	NP-F330 (supplied)	NP-F550
	Battery life (min.)	Battery life (min.)
Continuous recording	Approx. 90	Approx. 190

Approximate time that can be recorded at a temperature of 25°C (77°F) and 160×112 image size with a fully charged battery pack.

Notes

- The battery life and number of images will be decreased when using at low temperature, using the flash, turning the power on/off frequently, or using the zoom.
- The capacity of the floppy disk or "Memory Stick" is limited. The above figures are as a guide when you continuously record/play back by replacing the floppy disk or "Memory Stick."
- If sufficient battery remaining time is indicated but the power runs out soon, fully charge the battery so that the correct battery remaining time appears.
- Do not short the DC plug of the AC power adaptor with a metallic object, as this may cause a malfunction.

Using the AC power adaptor



❶ Open the DC IN cover and connect the AC power adaptor to the DC IN jack of your camera with the ▲ mark facing up.

❷ Connect the power cord (mains lead) to the AC power adaptor and then to a wall outlet (mains).

Using a car battery

Use Sony DC adaptor/charger.

Using your camera abroad

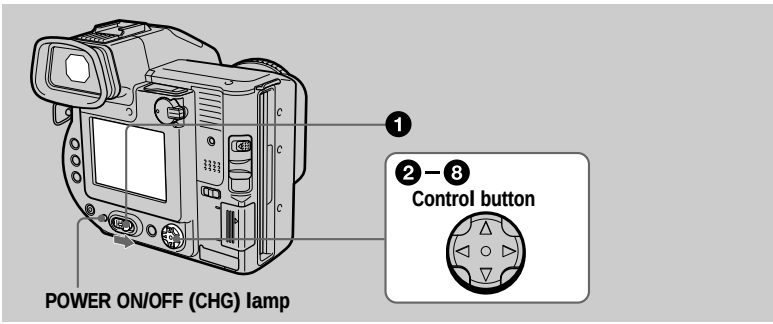
For details, see page 76.

When using the AC power adaptor

Be sure to use it near a wall outlet. If a malfunction occurs, disconnect the plug from the wall outlet.

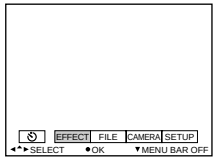
Setting the date and time

When you first use your camera, set the date and time. If these are not set, the CLOCK SET screen appears whenever you turn on your camera.

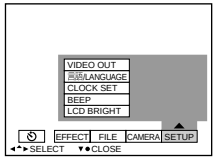


1 Slide the POWER switch to the right to turn on the power.
The POWER ON/OFF (CHG) (green) lamp lights up.

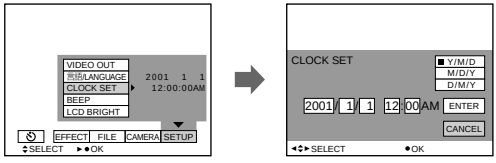
2 Press ▲ on the control button.
The menu bar appears on the LCD screen or on the finder.



3 Select [SETUP] with ▶ on the control button, then press the center ●.

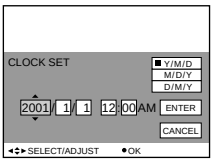


4 Select [CLOCK SET] with ▲/▼ on the control button, then press the center ●.



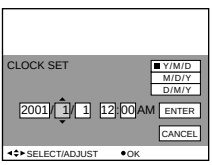
❺ Select the desired date display format with ▲/▼ on the control button, then press the center ●.

Select from [Y/M/D] (year/month/day), [M/D/Y] (month/day/year), or [D/M/Y] (day/month/year).



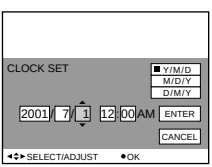
❻ Select the year, month, day, hour or minute item you want to set with ◀/▶ on the control button.

The item to be set is indicated with ▲/▼.



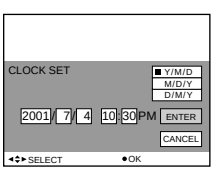
❼ Set the numeric value with ▲/▼ on the control button, then press the center ● to enter it.

After entering the number, ▲/▼ moves to the next item. If you selected [D/M/Y] in step ❺, set the time on a 24-hour cycle.



❽ Select [ENTER] with ▶ on the control button, then press the center ● at the desired moment to begin clock movement.

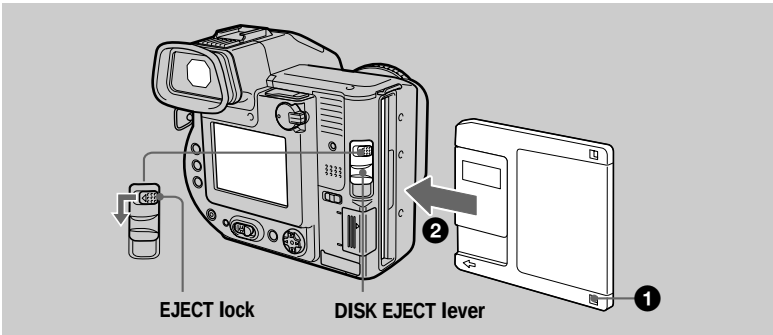
The date and time are entered.



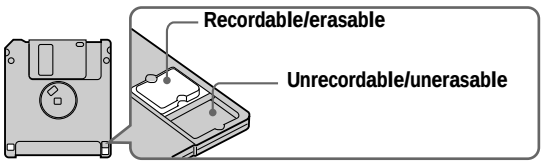
To cancel the date and time setting

Select [CANCEL] with ▲/▼/◀/▶ on the control button, then press the center ●.

Inserting a floppy disk



1 Check that the write protect tab is set to the recordable position for recording.



2 Insert the floppy disk until it clicks.

Usable floppy disks

- Size: 3.5 inch
- Type: 2HD (1.44 MB)
- Format: MS-DOS format (512 bytes × 18 sectors)

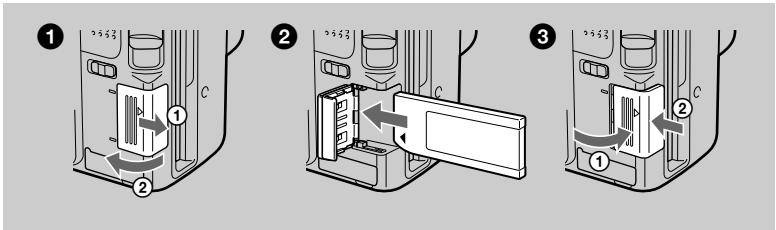
Notes

- Do not insert the media other than the floppy disks described above.
- You cannot use the optional MSAC-FD2M/FD2MA Floppy Disk Adaptor for Memory Stick.
- Never remove the floppy disk, turn off the power, or change the position of the MS/FD selector while the access lamp is lit up.

Removing the floppy disk

While sliding the EJECT lock to the left, slide down the DISK EJECT lever.

Inserting a “Memory Stick”



1 Open the “Memory Stick” cover.
Slide the cover in the direction of the arrow.

2 Insert the “Memory Stick.”
Insert the “Memory Stick” with the ▶ mark facing toward the “Memory Stick” slot as illustrated until it clicks.

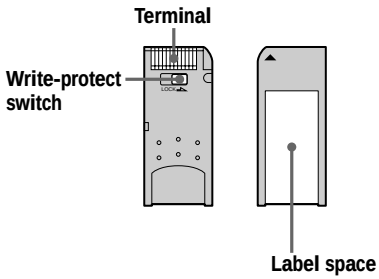
3 Close the “Memory Stick” cover.

Removing the “Memory Stick”

Open the “Memory Stick” cover, then push the “Memory Stick” once lightly.

Notes

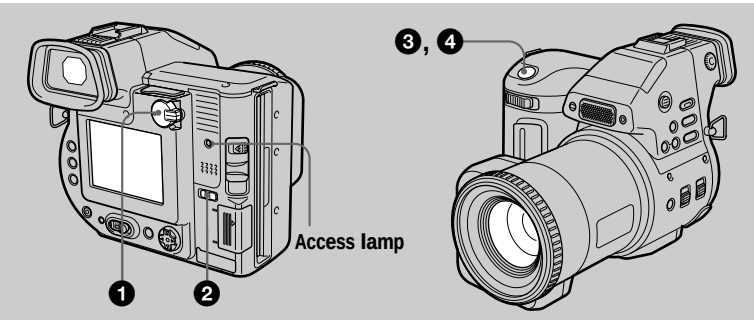
- If you do not insert the “Memory Stick” firmly until it clicks, a message such as “MEMORY STICK ERROR” will be displayed.
- Never remove the “Memory Stick,” turn off the power, or change the position of the MS/FD selector while the access lamp is lit up.
- You cannot record or edit images on a “Memory Stick” if the write-protect switch is set to the LOCK position.



The position or shape of the write-protect switch depends on the type of the “Memory Stick.”
“Memory Stick” and MEMORY STICK are trademarks of Sony Corporation.

Recording still images

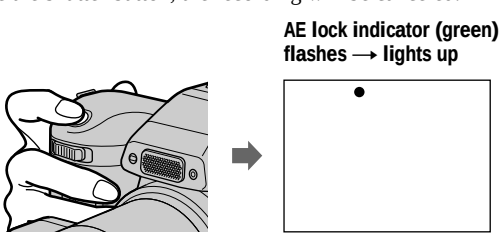
Still images are recorded in JPEG format.
To record still images, slide the POWER switch to the right to turn on the power and insert a floppy disk or a “Memory Stick.”



1 Set the PLAY/STILL/MOVIE selector to STILL.

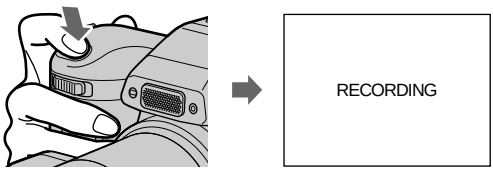
2 Select the recording media using the MS/FD selector.
MS: When recording on the “Memory Stick.”
FD: When recording on the floppy disk.

3 Press and hold the shutter button halfway down.
The beeps sound and the image is frozen. However, **the image has not been recorded yet**. While the AE lock indicator ● is flashing, the camera automatically adjusts the exposure and focus of the captured image. When the camera finishes the automatic adjustments, **the AE lock indicator ● stops flashing, then lights up, and the camera is ready for recording.**
If you release the shutter button, the recording will be canceled.



❹ Press the shutter button fully down.

The shutter clicks. "RECORDING" appears on the LCD screen or on the finder, and the image will be recorded on the floppy disk or the "Memory Stick." When "RECORDING" disappears from the LCD screen or finder, you can start the next recording.



For the number of images you can record on a floppy disk or a "Memory Stick"

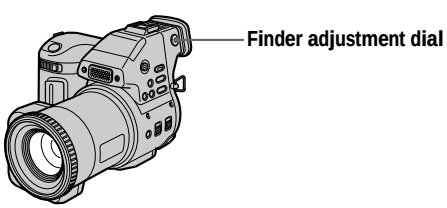
See page 48.

Notes

- When recording bright subjects, the color of the LCD screen may change after the AE is locked. However, this will not affect the recorded image.
- While the image is being recorded on a floppy disk or a "Memory Stick," the access lamp lights. When this lamp is lit, do not shake or strike the camera. Also, do not turn the power off, not change the position of the MS/FD selector, or not remove the battery pack/floppy disk/"Memory Stick." Otherwise, an image data breakdown may occur and the floppy disk or the "Memory Stick" may become unusable.
- When you press the shutter button fully down at once, the camera starts recording after the automatic adjustment is complete. However, the recording cannot be carried out while the ϟ lamp (page 8) is flashing. (During this time, the camera is charging the flash.)

Recording images with the finder

Turn the finder adjustment dial until the image appears clearly within the finder, then record the image.

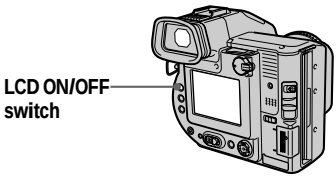


Note

The finder display is automatically turned off when your face is not near the finder.

Turning off the LCD screen

Press LCD ON/OFF switch to turn off the LCD screen. The battery life will be longer.



Notes

- You cannot turn off the LCD screen when [DEMO] is set to [ON] in the menu settings.
- When both the LCD screen and the finder display are turned off, you can only use followings:
  —LCD ON/OFF switch
  —POWER switch
  —PLAY/STILL/MOVIE selector
  —Shutter button
  —MS/FD selector
  —STEADY SHOT ON/OFF switch
  —FOCUS AUTO/MANUAL switch
  —Focus ring

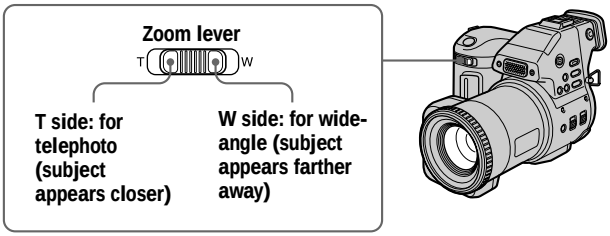
Checking the last recorded image (Quick Review)

You can check the last recorded image by clearing the menu bar from the screen (page 41) and pressing ◀ on the control button.
To return to the normal recording mode: press the shutter button lightly, or select [RETURN] with ◀/▶ on the control button and then press the center ●.
To delete the image: first select [DELETE] on the Quick Review screen with ◀/▶ on the control button and press the center ●, and then select [OK] with ▲/▼ on the control button and press the center ●.

Adjusting the brightness of the LCD screen

Adjust the brightness with the [LCD BRIGHT] item in the menu settings (page 47). This adjustment does not affect the brightness of the images recorded on the floppy disk or the “Memory Stick.”

Using the zoom feature



If you cannot get a sharp focus on a close subject

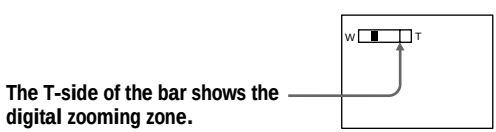
Slide the zoom lever to the W side and move closer to the subject until the focus is sharp (page 54).

Minimum focal distance to the subject

W side: About 25 cm (9 7/8 inches)
T side: About 80 cm (31 1/2 inches)
To record even closer subjects, see page 54.

Digital zoom function

This camera has a digital zoom function.
Digital zoom enlarges the image by digital processing, and it starts to function when the zoom exceeds 10×.



Using digital zoom

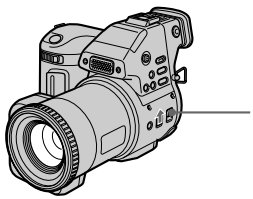
- The maximum zoom magnification is 20×.
- Digital zooming deteriorates the picture quality. When digital zoom is not necessary, set [DIGITAL ZOOM] to [OFF] in the menu settings (page 45).

Note

Digital zoom does not work for moving images.

Activating the SteadyShot function

When the SteadyShot function is working, the camera compensates for camera-shake.



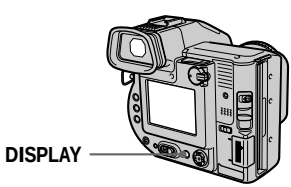
Set the STEADY SHOT ON/OFF switch to ON. The (SteadyShot) indicator appears on the LCD screen or on the finder.

Notes

- The SteadyShot function will not correct excessive camera-shake.
- If you use a wide conversion lens (not supplied), this lens may influence the SteadyShot function.

The indicators on the LCD screen or on the finder during recording

Press DISPLAY to turn on/off the indicators on the LCD screen or on the finder. See page 89 for a detailed description of the indicators.

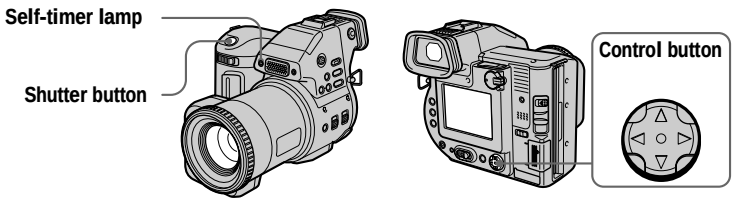


Notes

- You cannot turn off the (self-timer) indicator and some of the indicators used in advanced operations.
- The indicators on the LCD screen or on the finder are not recorded.

Using the self-timer

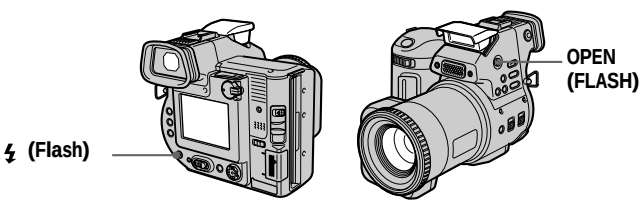
When you use the self-timer function, the subject is recorded 10 seconds after you press the shutter button.



Select ⏲ on the LCD screen or on the finder with ◀/▶/▲/▼ on the control button, then press the center ●. The ⏲ (self-timer) indicator appears on the LCD screen or on the finder, and the subject is recorded 10 seconds after you press the shutter button. The self-timer lamp flashes after you press the shutter button until the image is recorded.

Recording images with the flash

Press OPEN (FLASH) to pop up the flash. The initial setting is AUTO (no indication). In this mode, the flash automatically strobes when the surroundings become dark. To change the flash mode, press ϟ (Flash) repeatedly so that the flash mode indicator appears on the LCD screen or on the finder. This setting can be set only when the flash is popped up.



Each time you press the button, the indicator changes as follows.
(No indication) → 👁 → ϟ → ⊗ → (No indication)

👁 Auto red-eye reduction : The flash strobes before recording to reduce the red-eye phenomenon.

ϟ Forced flash : The flash strobes regardless of the surrounding brightness.

⊗ No flash : The flash does not strobe.

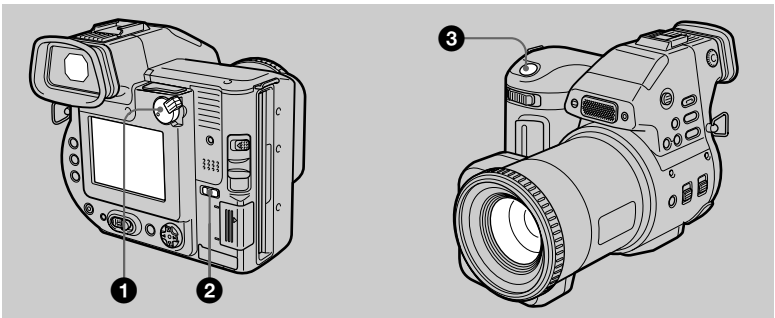
You can change the amount of the flash light with [FLASH LEVEL] in the menu settings (page 46).

Notes

- The recommended shooting distance is 0.6 to 2.5 m (23 5/8 inches to 8 1/3 feet).
- Attaching a conversion lens (not supplied) may block the light from the flash and the recorded image may be eclipsed.
- You cannot use the built-in flash and an external strobe at the same time.
- The ⊗ indicator appears when the flash is not popped up under situations that you should use the flash.
- 👁 Auto red-eye reduction may not produce the desired red-eye reduction effects depending on individual differences, the distance to the subject, if the subject does not see the pre-strobe, or other conditions. In addition, red-eye reduction effects are also difficult to obtain if you select a slow shutter speed in shutter priority mode of the PROGRAM AE function.
- The flash effect is not obtained easily when you use forced flash in a bright location.

Recording moving images

Moving images with audio are recorded in MPEG format.
To record moving images, slide the POWER switch to the right to turn on the power and insert a floppy disk or a “Memory Stick.”



1 Set the PLAY/STILL/MOVIE selector to MOVIE.

2 Select the recording media using the MS/FD selector.
MS: When recording on the “Memory Stick.”
FD: When recording on the floppy disk.

3 Press the shutter button fully down.
“REC” appears on the LCD screen or finder, and the image and sound are recorded on the floppy disk or “Memory Stick.”

If you press the shutter button momentarily
The image and sound are recorded for 5 seconds. The recording time can be set to 10 or 15 seconds with [REC TIME SET] in the menu settings (page 45).

If you hold the shutter button down
The image and sound are recorded while the shutter button is held down for up to 60 seconds. However, when [IMAGE SIZE] in the menu settings is set to [320×240], the maximum recording time is 15 seconds (page 48).

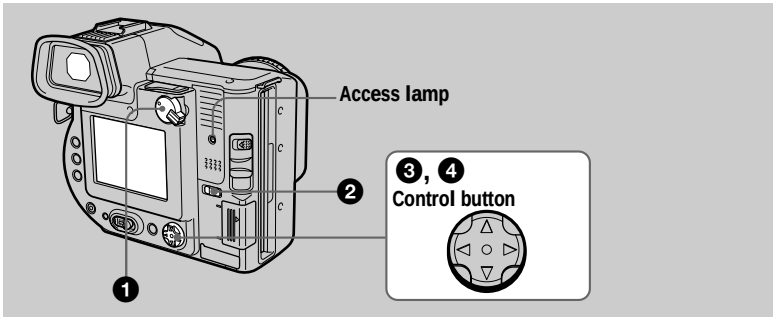
Adjusting the brightness of the LCD screen, zooming or using the self-timer

See pages 20 to 23.

LCD screen or finder indicators during recording

Press DISPLAY to turn on/off the indicators on the LCD screen or on the finder. These indicators are not recorded. See page 89 for a detailed description of the indicators.

Playing back still images

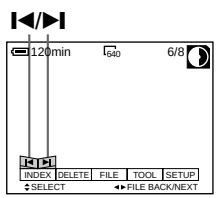


1 Set the PLAY/STILL/MOVIE selector to PLAY.
The last recorded image (still or moving) appears on the LCD screen or on the finder.

2 Select the playback media using the MS/FD selector.
MS: When playing back images in the "Memory Stick."
FD: When playing back images in the floppy disk.

3 Press ▲ on the control button to display the menu bar on the LCD screen or on the finder.

4 Select the desired still image with the control button.
Press ▲/▼/◄/► on the control button to select ⏮/⏭ on the LCD screen or on the finder, then press ◄/►.
⏮: To display the preceding image.
⏭: To display the next image.



When the menu bar is not displayed

You can directly select and play back the image with ◄/► on the control button.

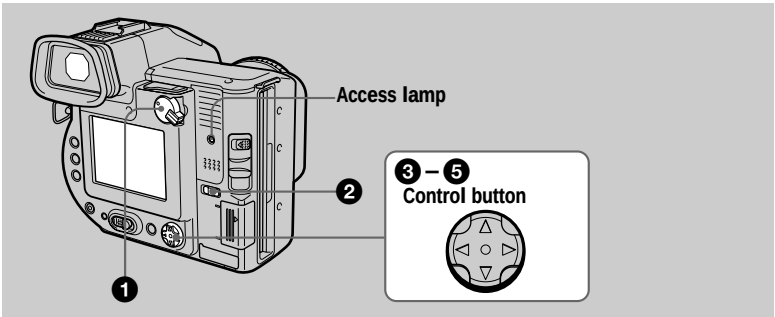
Notes

- You might not be able to correctly play back images recorded with this camera on other equipment.
- You may not be able to play back images whose image sizes are larger than the maximum image size that can be used with this camera for recording.

LCD screen or finder indicators during still image playback

Press DISPLAY to turn on/off the indicators on the LCD screen or on the finder.
See page 90 for a detailed description of the indicators.

Playing back moving images

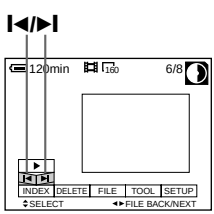


1 Set the PLAY/STILL/MOVIE selector to PLAY.
The last recorded image (still or moving) appears on the LCD screen or on the finder.

2 Select the playback media using the MS/FD selector.
MS: When playing back images in the "Memory Stick."
FD: When playing back images in the floppy disk.

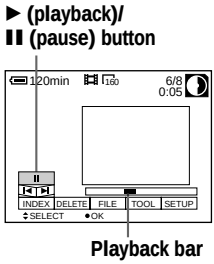
3 Press ▲ on the control button to display the menu bar on the LCD screen or on the finder.

4 Select the desired moving image with the control button.
Moving images are displayed one size smaller than still images.
Press ▲/▼/◀/▶ on the control button to select ⏮/⏭ on the LCD screen or on the finder, then press ◀/▶.
⏮: To display the preceding image.
⏭: To display the next image.



5 Select the ▶ (playback) button on the LCD screen or on the finder with ▲/▼/◀/▶ on the control button, then press the center ●.

The moving image and sound are played back. During playback, ▶ (playback) changes to ❚❚ (pause).



To pause playback

Select ❚❚ (pause) on the LCD screen or on the finder with ▲/▼/◀/▶ on the control button, then press the center ●.

When the menu bar is not displayed

You can directly select the image with ◀/▶ on the control button, and play back the image and sound by pressing the center ●. When you press the center ● during playback, playback is paused.

Adjusting the volume

Press VOL +/– to adjust the volume.

LCD screen or finder indicators during moving image playback

Press DISPLAY to turn on/off the indicators on the LCD screen or on the finder. See page 90 for a detailed description of the indicators.

Viewing images using a computer

You can view or modify data recorded with your camera using application software on a computer, or attach it to an E-mail.

Viewing images using a floppy disk drive

For Windows 98 users

1. **Start up your computer and insert the floppy disk into the disk drive of your computer.**
2. **Open [My Computer] and double-click [3 1/2 Floppy (A:)].**
3. **Double-click the desired data file.**
   Copying a file to the hard disk of your computer before viewing it is recommended when playing back an audio file or a moving image. If you play back the file directly from the floppy disk, the image and sound may break off.

Viewing images on a computer connected using the USB cable

This section describes the method for viewing images on a computer using the supplied USB cable.

What is the USB connection? : You can connect the camera to your computer using the USB cable, to view or modify the images stored in a floppy disk or "Memory Stick."

To make the USB connection: You have to install the USB driver in your computer beforehand.

Be sure to also see the operation manuals for your computer and application software.

Notes

- Data recorded with your camera is stored in the following formats. Make sure that applications that support these file formats are installed on your computer.
  —Still images (other than TEXT mode, uncompressed mode and Clip Motion): JPEG format
  —Moving images/audio: MPEG format
  —Uncompressed mode still images: TIFF format
  —TEXT mode/Clip Motion: GIF format
- ActiveMovie Player (DirectShow) must be installed (to play back moving pictures).
- QuickTime 3.2 or newer must be installed (to play back moving pictures).

■Recommended computer environment

Recommended Windows environment

OS:Microsoft Windows 98, Windows 98SE, Windows Me, Windows 2000 Professional
The above OS is required to be installed at the factory.
Operation is not assured in an environment upgraded to the operating systems described above.
CPU:MMX Pentium 200 MHz or faster
The USB connector must be provided as standard.

Recommended Macintosh environment

Macintosh computer with the Mac OS 8.5.1/8.6/9.0
The above OS is required to be installed at the factory.
However, note that the update to Mac OS 9.0 should be used for the following models with the Mac OS 8.6 standard installation at the factory:
iMac with a slot loading type CD-ROM drive, iBook, Power Mac G4
The USB connector must be provided as standard.

Notes

- Operations are not guaranteed for either the Windows or Macintosh environment if you connect two or more USB equipment to a single computer at the same time (except for the USB keyboard and mouse which are provided as standard), or when using a hub.
- Depending on the type of USB equipment that is used simultaneously, some equipment may not operate.
- Operations are not guaranteed for all the recommended computer environments mentioned above.

- Windows and ActiveMovie, DirectShow are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.
- Macintosh and Mac OS, QuickTime are either registered trademarks or trademarks of Apple Computer, Inc.
- All other product names mentioned herein may be the trademarks or registered trademarks of their respective companies. Furthermore, “™” and “®” are not mentioned in each case in this manual.

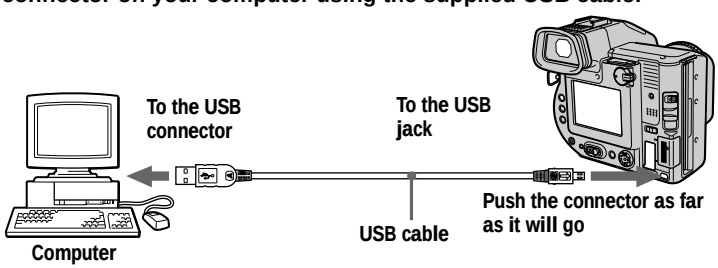
■Installing the USB driver

Do not connect your camera to your computer before installing the USB driver.

First, install the USB driver to the computer. The USB driver is contained together with application software for viewing images on a CD-ROM which is supplied with your camera.
If the drive is not recognized properly, see “Troubleshooting” on page 79.

For Windows 98, Windows 98SE, Windows Me and Windows 2000 Professional users

1. **Make sure that the camera is not connected to your computer.**
   Do not connect the USB cable in this step.
2. **Turn on your computer and allow Windows to load.**
3. **Insert the supplied CD-ROM in the CD-ROM drive of your computer.**
   The application software screen appears.
4. **Click “USB Driver Installation for Windows 98/98SE, Windows Me, Windows 2000”.**
   USB driver installation starts.
5. **Follow the on-screen messages to install the USB driver.**
   If the message appears after the installation to verify that you restart the computer, restart the computer.
6. **Connect the USB jack (mini-B) on your camera with the USB connector on your computer using the supplied USB cable.**



7. **Insert a floppy disk or a “Memory Stick” into your camera, and set the MS/FD selector to the appropriate position according to the media inserted.**
8. **Connect the AC power adaptor and turn on your camera.**
   “USB MODE” appears on the LCD screen or on the finder of your camera and the camera is set to communication standby mode. Your computer recognizes the camera, and the Windows Add Hardware Wizard starts.

❾ **Follow the on-screen messages to recognize the hardware.**
The Add Hardware Wizard starts twice because two different USB drivers are installed. Be sure to allow the installation to complete without interrupting it. If the message appears after the installation to verify that you restart the computer, restart the computer.

For Macintosh users

❶ **Turn on your computer and allow the Mac OS to load.**

❷ **Insert the supplied CD-ROM in the CD-ROM drive of your computer.**

❸ **Double-click the CD-ROM drive icon to open the window.**

❹ **Double-click the icon of the hard disk containing the "System Folder" to open the window.**

❺ **Move the following two files from the window opened in step ❸ to the "System Folder" icon in the window opened in step ❹ (drag and drop).**
- Sony USB Driver
- Sony USB Shim

❻ **When "Put these items into the Extensions folder?" appears, click "OK."**

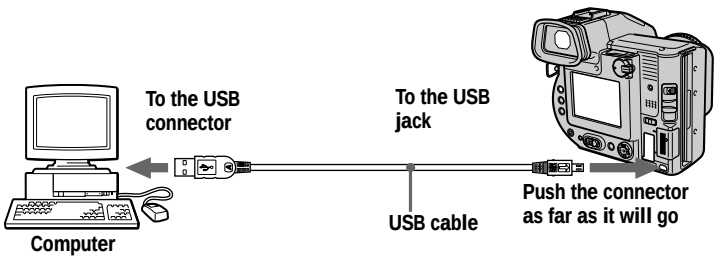
❼ **Restart your computer and connect the USB cable.**

■Viewing images

For Windows 98, Windows 98SE, Windows Me and Windows 2000 Professional users

❶ Turn on the power of your computer and allow Windows to load.

❷ Connect one end of the supplied USB cable to the USB jack (mini-B) on the camera and the other end to the USB connector on your computer.



❸ Insert a floppy disk or "Memory Stick" into your camera, and set the MS/FD selector to the appropriate position according to the media inserted.

❹ Connect the AC power adaptor to your camera and then to a wall outlet (mains) and turn on the power of your camera.
"USB MODE" appears on the LCD screen or on the finder of the camera.

❺ Open "My Computer" on Windows and double-click the newly recognized drive, "Removable Disk"(Example (D:)*).
The folders inside the floppy disk or "Memory Stick" are displayed.
If the drive is not recognized properly, see "Troubleshooting" on page 79.

* Drive identifier depends on your computer.

6 Select and double-click the desired image/audio file from the folder.

For the detailed folder and file name, see “Image file storage destinations and image file names” (page 36).

When viewing an image in a floppy disk

Desired file type	Double-click in this order
Audio*	“Voice” folder → Audio file*
E-mail image	“E-mail” folder → Image file
Other files	Image file

When viewing an image in a “Memory Stick”

Desired file type	Double-click in this order
Still image	“Dcim” folder → “100msdcf” folder → Image file
Moving image*	“Mssony” folder → “Moml0001” folder → Image file*
Audio*	“Mssony” folder → “Momlv100” folder → Audio file*
Clip Motion image	“Dcim” folder → “100msdcf” folder → Image file
E-mail image TIFF image (uncompressed)	“Mssony” folder → “Imcif100” folder → Image file

* Copying a file to the hard disk of your computer before viewing it is recommended. If you play back the file directly from the floppy disk or “Memory Stick,” the image and sound may break off.

For Windows Me or Windows 2000 Professional users

When using Windows Me or Windows 2000 Professional, the following procedures are recommended when disconnecting the USB cable from your computer, ejecting the floppy disk or “Memory Stick” from the camera, or changing the position of the MS/FD selector, while it is connected to your computer.

① Stop the drive by clicking on the “Unplug/Eject” icon in the task tray.

② Carry out the operation after the message, confirming the safe removal of the hardware, appears.

Notes on using your computer

Floppy disk/“Memory Stick”

- **Format the floppy disk or “Memory Stick” only using this camera (page 72). You cannot format the floppy disk or “Memory Stick” using a computer via the USB cable.**
- Use only a DOS/V 2HD format floppy disk. Other disks will not be recognized by a computer.
- Do not optimize the “Memory Stick” on a Windows machine. This will shorten the “Memory Stick” life.
- Do not compress the data on the floppy disk or “Memory Stick.” Compressed files cannot be played back on your camera.

Software

- Depending on your application software, the file size may increase when you open a still image file.
- When you load an image modified using the supplied retouching software from your computer to the camera or when you directly modify the image on the camera, the image format will differ so the “FILE ERROR” message may appear and you may be unable to open the file.
- Depending on your application software, only the first frame of a Clip Motion image may be displayed.

Communications with your computer

Communications between your camera and your computer may not recover after recovering from Standby or Sleep.

Other

When connecting the camera to a computer or when using an external power source, remove the battery pack from inside the camera.

Image file storage destinations and image file names

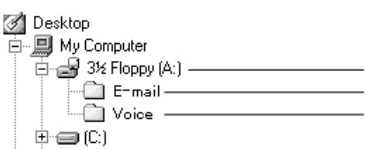
Image files recorded with your camera are grouped in folders by recording mode. Images in a floppy disk and ones in a “Memory Stick” have different file names. The meanings of the file names are as follows.

When using floppy disks

□□□ stands for any number within the range from 001 to 999.
△ stands for one of the following characters below.

S: Still image file recorded at 640×480 size
F: Still image file of more than 640×480 size
V: Moving image file recorded at 160×112 size
W: Moving image file recorded at 320×240 size
T: Still image file recorded in TEXT mode
C: Clip Motion file recorded in NORMAL mode
M: Clip Motion file recorded in MOBILE mode

For Windows 98 users (The drive recognizing the floppy disk is [A].)



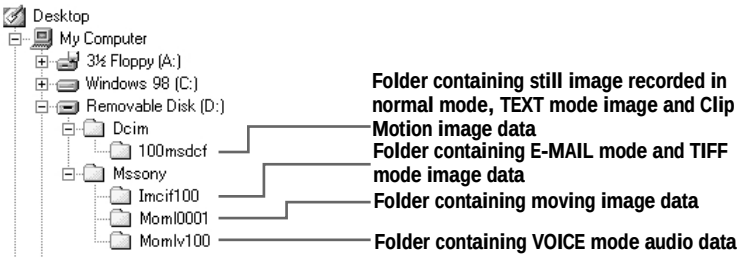
Location	File	Meaning
3 1/2 Floppy [A:]	MVC-□□□△.JPG	• Still image file recorded normally • Still image file recorded in — E-MAIL mode (page 51) — VOICE mode (page 51)
	MVC-□□□△.411	• INDEX display file This file can only be played back on your camera.
	MVC-□□□△.MPG	• Moving image file
	MVC-□□□△.GIF	• Still image file recorded in — TEXT mode (page 52) — Clip Motion (page 49)
	MVC-□□□△.THM	• Index image file recorded in — TEXT mode (page 52) — Clip Motion (page 49)
E-mail folder	MVC-□□□E.JPG	• Small-size image file recorded in E-MAIL mode (page 51)
Voice folder	MVC-□□□A.MPG	• Audio file recorded in VOICE mode (page 51)

• The numerical portions of the following files are the same.
—An image file recorded in E-MAIL mode and its corresponding small-size image file
—An audio file recorded in VOICE mode and its corresponding image file
—An image file recorded in TEXT mode and its corresponding index image file
—An image file recorded with Clip Motion and its corresponding index image file
• INDEX display files other than the TEXT mode and Clip Motion files are played back only on this camera.

When using “Memory Stick”s

□□□□ stands for any number within the range from 0001 to 9999.

For Windows 98 users (The drive recognizing the camera is “D.”)



Folder	File	Meaning
100msdcf	DSC0□□□□.JPG	• Still image file recorded normally • Still image file recorded in — E-MAIL mode (page 51) — TIFF mode (page 53) — VOICE mode (page 51)
	CLP0□□□□.GIF	• Clip Motion file recorded in NORMAL mode (page 49)
	CLP0□□□□.THM	• Index image file of Clip Motion file recorded in NORMAL mode
	MBL0□□□□.GIF	• Clip Motion file recorded in MOBILE mode (page 49)
	MBL0□□□□.THM	• Index image file of Clip Motion file recorded in MOBILE mode
	TXT0□□□□.GIF	• Still image file recorded in TEXT mode (page 52)
	TXT0□□□□.THM	• Index image file of still image file recorded in TEXT mode

Folder	File	Meaning
Imcif100	DSC0□□□□.JPG	• Small-size image file recorded in E-MAIL mode (page 51)
	DSC0□□□□.TIF	• Uncompressed image file recorded in TIFF mode (page 53)
Moml0001	MOV0□□□□.MPG	• Moving image file recorded normally
Momlv100	DSC0□□□□.MPG	• Audio file recorded in VOICE mode (page 51)

The numerical portions of the following files are the same.
—A small-size image file recorded in E-MAIL mode and its corresponding image file
—An uncompressed image file recorded in TIFF mode and its corresponding image file
—An audio file recorded in VOICE mode and its corresponding image file
—An image file recorded in TEXT mode and its corresponding index image file
—An image file recorded with Clip Motion and its corresponding index image file

Tips

The digital still camera saves recorded images as digital data. The format of the saved data is called as the file format. The formats that can be used with this camera are as follows:

JPEG format

Most digital still cameras, operating systems of computers, and browser software adopt this format. This format is able to compress files without appreciable deterioration. However, if the image is compressed and saved on repeated occasions, the image will deteriorate. This camera records still images using the JPEG format for normal recording.

GIF format

Using this format, the image will not deteriorate even if the image is compressed and saved on repeated occasions. This format limits the number of colors to 256 colors. This camera records still images using the GIF format in Clip Motion (page 49) or TEXT mode (page 52).

TIFF format

Stores shooting images without compression, so the image does not deteriorate. Most of operating systems and applications correspond to this format. This camera records still images using the TIFF format for the TIFF mode (page 53).

MPEG format

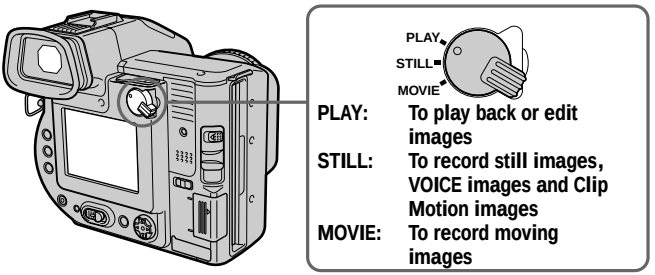
This format is very typical for moving images. This camera records audio using the MPEG format for the moving images recording and the VOICE mode (page 51).

Before performing advanced operations

This section describes the basic control methods that are frequently used for "Advanced operations."

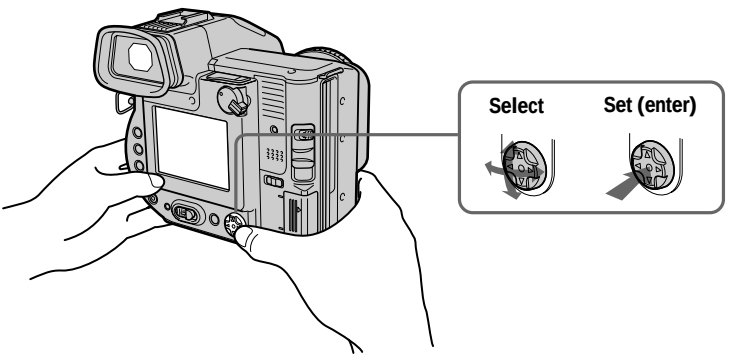
How to use the PLAY/STILL/MOVIE selector

The PLAY/STILL/MOVIE selector selects whether you can use your camera to record or play back and edit images. Set the selector as follows before starting to operate your camera.

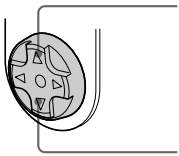


How to use the control button

The control button is used to select the buttons, images and menus displayed on the LCD screen or on the finder of your camera and modify the settings. The operation methods that are frequently used for "Advanced operations" are described below.

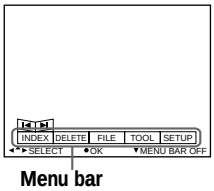


Turning on/off the operation buttons (menu bar) on the LCD screen or on the finder



Press ▲ to display the menu bar on the LCD screen or on the finder.

Press ▼ to clear the menu bar from the LCD screen or on the finder.



Menu bar

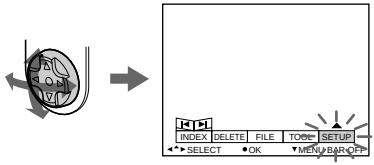
Note

You cannot clear the menu bar on the INDEX screen (page 61).

Selecting items or images on the LCD screen or on the finder

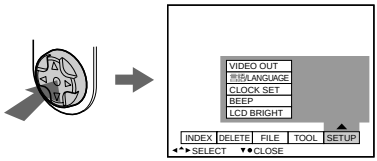
❶ **Press ▲/▼/◀/▶ on the control button to select the item you want to set or the image you want to display.**

The color of the selected item or the frame of the selected image changes from blue to yellow.



❷ **Press the center ● to enter the item.**

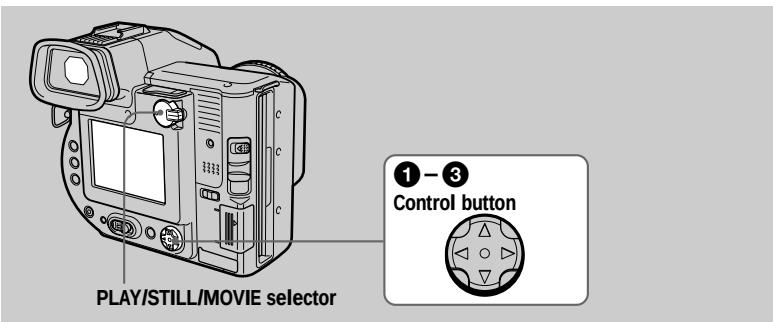
Repeat steps ❶ and ❷ to execute each function.



The "Advanced operations" section of this manual refers to selecting and entering items by the above procedure as "Select [item name]."

How to change the menu settings

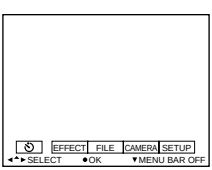
Some of the advanced operations for your camera are executed by selecting menu items displayed on the LCD screen or on the finder with the control button.



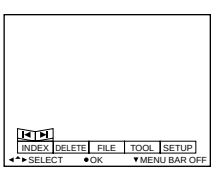
1 Press ▲ on the control button to display the menu bar.

The menu bar appears as follows according to the position of the PLAY/STILL/MOVIE selector.

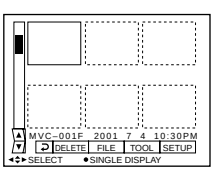
STILL/MOVIE



PLAY (single mode)



PLAY (INDEX mode)

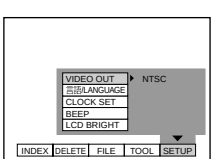


2 Select the desired item with ▲/▼/◀/▶ on the control button, then press the center ●.

The color of the selected item changes from blue to yellow, and when you press the center ●, the settings that can be set for its item are displayed.

Note

The displayed items are changed according to the position of the MS/FD selector.



3 Select the desired setting with ▲/▼/◀/▶ on the control button, then press the center ●.

To cancel the setup

Press ▼ on the control button repeatedly until the LCD screen or finder returns to the menu bar display in step 1. To clear the menu bar, press ▼ again.

Menu settings

Menu items that can be modified differ depending on the positions of the PLAY/STILL/MOVIE selector or the MS/FD selector. The LCD screen or the finder shows only the items you can operate at the moment. Initial settings are indicated with ■.

(self-timer)

Records with the self-timer (page 23).

EFFECT

Item	Setting	Description	PLAY/STILL/MOVIE selector
P. EFFECT	SOLARIZE B&W SEPIA NEG.ART ■OFF	Sets the image special effects (page 60).	STILL MOVIE
DATE/TIME	DAY & TIME DATE ■OFF	Sets whether to insert the date and time into the image (page 60).	STILL

FILE

Item-1	Item-2	Setting	Description	PLAY/STILL/MOVIE selector
DISK TOOL (When the MS/FD selector is set to FD.)	FORMAT	OK	Formats a floppy disk (page 72). Once you format a floppy disk, all of the data, including protected images are deleted. Be sure to check for images before you format a floppy disk.	PLAY STILL MOVIE
		CANCEL	Cancels formatting of a floppy disk.	
	DISK COPY	OK	Copies all data stored in a floppy disk to another disk (page 70).	
		CANCEL	Cancels the disk copy.	
	CANCEL		Goes back to the [DISK TOOL] item.	

Item	Setting	Description	PLAY/STILL/ MOVIE selector
FORMAT (When the MS/FD selector is set to MS.)	OK	Formats a “Memory Stick.” Once you format the “Memory Stick,” all of the data, including protected images are deleted. Be sure to check for images before you format a “Memory Stick.”	PLAY STILL MOVIE
	CANCEL	Cancels formatting of a “Memory Stick.”	
FILE NUMBER	SERIES	Assigns numbers to files in sequence even if the floppy disk or “Memory Stick” is changed. Note that file numbers are not in sequence between a floppy disk and “Memory Stick.”	STILL MOVIE
	■NORMAL	Resets the file number that starts from 001 or 0001 each time the floppy disk or “Memory Stick” is changed.	
CLIP MOTION		Sets the image size and number of frames for creating GIF format animation (page 49).	STILL
	160×120 (NORMAL)	Up to 10 frames can be recorded.	
	80×72 (MOBILE)	Up to 2 frames can be recorded.	
	CANCEL	Cancels Clip Motion.	
IMAGE SIZE (When the MS/FD selector is set to FD.)	■1600× 1200 1600 (3:2) 1600 (ECM) 1024×768 640×480	Selects the image size when recording still images.	STILL
IMAGE SIZE (When the MS/FD selector is set to MS.)	■1600 (FINE) 1600 (3:2) F 1024 (FINE) 640 (FINE)	Selects the image size when recording still images.	STILL
IMAGE SIZE	320×240 ■160×112	Selects the MPEG image size when recording moving images.	MOVIE

Item	Setting	Description	PLAY/STILL/ MOVIE selector
REC MODE	TIFF	Records a TIFF (uncompressed) file in addition to the JPEG file when the MS/ FD selector is set to MS.	STILL
	TEXT	Records a GIF file in black-and-white.	
	VOICE	Records an audio file (with a still image) in addition to the JPEG file.	
	E-MAIL	Records a small-size (320×240) JPEG file in addition to the selected image size.	
	■NORMAL	Records an image using the normal recording mode.	
REC TIME SET	15 sec	Selects the recording time for moving images.	MOVIE
	10 sec		
	■5 sec		
SLIDE SHOW (Only in PLAY (single) mode)	INTERVAL	Sets the slide show interval. ■3 sec/5 sec/10 sec/30 sec/1 min	PLAY
	REPEAT	A slide show can be repeated. (When using the floppy disk, a slide show is up to approx. 20 minutes) ■ON/OFF	
	START	Starts the slide show.	
	CANCEL	Cancels the slide show settings or execution.	
PRINT MARK	ON	Marks the still images to be printed (page 71).	PLAY
	■OFF	Unmarks the print mark of the still images.	
PROTECT	ON	Protects images against accidental erasure (page 65).	PLAY
	■OFF	Releases protection of images.	

CAMERA

Item	Setting	Description	PLAY/STILL/ MOVIE selector
DIGITAL ZOOM	■ON	Uses digital zoom.	STILL
	OFF	Does not use digital zoom.	
SHARPNESS	+2 to –2	Adjusts the sharpness of the image. The ◫ indicator appears (except when the setting is 0).	STILL

Item	Setting	Description	PLAY/STILL/ MOVIE selector
FLASH LEVEL	HIGH	Makes the flash level higher than normal.	STILL
	■NORMAL	Normal setting.	
	LOW	Makes the flash level lower than normal.	
EXPOSURE	+2.0EV to –2.0EV	Adjusts the exposure before recording.	STILL MOVIE

TOOL

Item	Setting	Description	PLAY/STILL/ MOVIE selector
COPY (When the MS/FD selector is set to FD.)	FD → FD	Copies the image to a floppy disk.	PLAY
	FD → MS	Copies the image to a “Memory Stick.”	
	CANCEL	Cancels copying of the image (page 68).	
COPY (When the MS/FD selector is set to MS.)	MS → MS	Copies the image to a “Memory Stick.”	PLAY
	MS → FD	Copies the image to a floppy disk.	
	CANCEL	Cancels copying of the image (page 68).	
RESIZE (When the MS/FD selector is set to FD.)	1600× 1200 1024×768 640×480 CANCEL	Changes the recorded image size in PLAY (single) mode (page 67).	PLAY
RESIZE (When the MS/FD selector is set to MS.)	1600 (FINE) 1024 (FINE) 640 (FINE) CANCEL	Changes the recorded image size in PLAY (single) mode (page 67).	PLAY

SETUP

Item	Setting	Description	PLAY/STILL/ MOVIE selector
DEMO	■STBY/ON OFF	Displayed only when you use the AC power adaptor in STILL or MOVIE mode. When [ON] is selected, a demonstration will start if you do not operate your camera for about 10 minutes. To stop the demonstration, turn off your camera.	STILL MOVIE

Item	Setting	Description	PLAY/STILL/ MOVIE selector
VIDEO OUT	NTSC	Sets the video output signal to NTSC mode (e.g., Japan, the USA).	PLAY STILL MOVIE
	PAL	Sets the video output signal to PAL mode (e.g., Europe).	
言語 / LANGUAGE	■ENGLISH	Displays the menu items in English.	PLAY STILL MOVIE
	日本語 /JPN	Displays the menu items in Japanese.	
CLOCK SET	—	Sets the date and time (page 14).	PLAY STILL MOVIE
BEEP	SHUTTER	Turns on the shutter sound only. (The shutter sound is heard when you press the shutter button.)	PLAY STILL MOVIE
	■ON	Turns on the beep/shutter sound (when you press the control button/shutter button).	
	OFF	Turns off the beep/shutter sound.	
LCD BRIGHT		Adjusts the LCD screen brightness using +/- on the LCD screen or on the finder.	PLAY STILL MOVIE

INDEX (Only in PLAY (single) mode)

Displays six images at a time (PLAY (INDEX) mode).

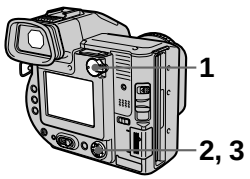
DELETE (Only in PLAY (single) mode)

Setting	Description	PLAY/STILL/MOVIE selector
OK	Deletes the displayed image.	PLAY
CANCEL	Cancels deleting of the image.	

⮌ (Return) (Only in PLAY (INDEX) mode)

Returns to PLAY (single) mode.

Setting the image size (IMAGE SIZE)



1 Set the PLAY/STILL/MOVIE selector to STILL or MOVIE.

2 Select [FILE] and then [IMAGE SIZE] from the menu.

3 Select the desired image size.

Still image size:

- When the MS/FD selector is set to **FD**
  1600×1200, 1600 (3:2)*, 1600 (ECM), 1024×768, 640×480

  (ECM): The image quality deteriorates, however, the number of images you can record increases. If you give priority to the image quality, select [1600×1200].

- When the MS/FD selector is set to **MS**
  1600 (FINE), 1600 (3:2)F*, 1024 (FINE), 640 (FINE)

  (FINE): The quality of the image recorded in a "Memory Stick" is higher than the image recorded in a floppy disk even if the image size is same. Also, the file size recorded in a "Memory Stick" is larger than the file recorded in a floppy disk.

* The image is recorded in the ratio of three to two to fit the printing paper size. Using this image size, the margin of an image is not printed out. However, the slight amount of the upper and lower of the image being displayed on the LCD screen or on the finder is not recorded.

Moving image sizes:
320×240, 160×112

The number of images or the time that you can record on a floppy disk or "Memory Stick" (8 MB)

Image size	Number of images or time*	
	Floppy disk	"Memory Stick"
1600×1200	Approx. 4	Approx. 8
1600 (3:2)	Approx. 4	Approx. 8
1600 (ECM)	Approx. 8	—
1024×768	Approx. 10	Approx. 20
640×480	Approx. 30	Approx. 48
320×240	Approx. 15 sec	Approx. 80 sec (15 sec)**
160×112	Approx. 60 sec	Approx. 320 sec (60 sec)**

* When REC MODE is set to NORMAL.

** The maximum recording time in continuous recording

Notes

- If you try to record 55 images or more on a floppy disk, even if the remaining disk capacity is sufficient, “DISK FULL” appears on the LCD screen or on the finder and you cannot record any more images.
- If you try to record 3001 images or more on a “Memory Stick,” even if the remaining memory capacity of the “Memory Stick” is sufficient, “NO MEMORY SPACE” appears on the LCD screen or on the finder and you cannot record any more images.
- In TEXT mode, even if you select [1600 (ECM)], the number of images you can record is equal with the number in [1600×1200].

Tips

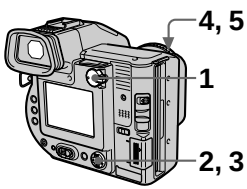
The size of the image is indicated by the pixel unit. The higher the number of pixels, the more information is included. So, an image that is saved using a large number of pixels is suitable for a large-format print and one that is saved using a smaller number of pixels is suitable for attaching to an E-mail. Normally, an image is recorded in the ratio of four to three to fit the monitor ratio. This camera can also record the image in the ratio of three to two to accommodate the most common printing paper size. This is the same ratio as the one used in photo-developing shops.

1600×1200

1600 (3:2)

Creating Clip Motion Files

Clip Motion is an animation function that plays back still images in succession. Clip Motion images are played back on this camera at approximately 0.5 s intervals. The images are stored in GIF format, which is convenient for creating home pages or attaching images to an e-mail.



1 Set the PLAY/STILL/MOVIE selector to STILL.

2 Select [FILE] and then [CLIP MOTION] from the menu.

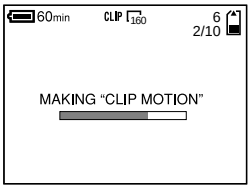
3 Select the desired mode.

160×120 (NORMAL)
Clip Motion of up to 10 frames can be recorded.
This is suitable for use on home pages, etc.

80×72 (MOBILE)
Clip Motion of up to 2 frames can be recorded.
This is suitable for use with portable data terminals.

CANCEL
This cancels the creation of Clip Motion.

4 Record the image for the first frame.



5 Record the image for the next frame.

Image recording can be repeated up to the maximum number of recordable frames.
The frame images are automatically recorded on the floppy disk or "Memory Stick" when you select [FINISH] or after recording the maximum number of frames.

To stop Clip Motion creation

Select [RETURN] after step **3**.
Note that if you record even one frame, you cannot stop Clip Motion creation.

The number of Clip Motion frames that you can record on a floppy disk or "Memory Stick" (8 MB)

Image size	Number of images	
	Floppy disk	"Memory Stick"
160×120 (NORMAL)	Approx. 7*	Approx. 40*
80×72 (MOBILE)	Approx. 54**	Approx. 400**

* When recording 10 frames per Clip Motion file

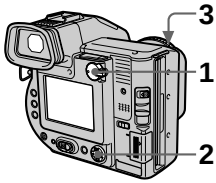
** When recording 2 frames per Clip Motion file

Notes

- Reading and writing data takes more time than normal image recording.
- Due to the limitations of the GIF format, the number of colors for Clip Motion images is reduced to 256 colors or less. Therefore, the picture quality may deteriorate for some images.
- The file size is reduced in MOBILE mode, so the picture quality deteriorates.
- GIF files not created on this camera may not be displayed correctly.

Recording still images for e-mail (E-MAIL)

The E-MAIL mode records a small-size (320×240) image at the same time as a still image. Small-size images are convenient for e-mail transmission, etc. Images in E-MAIL mode are recorded in the JPEG format.



1 Set the PLAY/STILL/MOVIE selector to STILL.

2 Select [FILE], [REC MODE], and then [E-MAIL] from the menu.

3 Record the image.

The number of images that you can record on a floppy disk or "Memory Stick" (8 MB) in E-MAIL mode

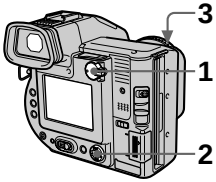
Image size	Number of images	
	Floppy disk	"Memory Stick"
1600×1200	Approx. 3	Approx. 8
1600 (3:2)	Approx. 3	Approx. 8
1600 (ECM)	Approx. 7	—
1024×768	Approx. 8	Approx. 20
640×480	Approx. 22	Approx. 44

To return to normal recording mode

Select [NORMAL] in step **2**.

Adding audio files to still images (VOICE)

Images in VOICE mode are recorded in the JPEG format, and audio is recorded in the MPEG format.



1 Set the PLAY/STILL/MOVIE selector to STILL.

2 Select [FILE], [REC MODE], and then [VOICE] from the menu.

3 Record the image.
If you press and release the shutter button, sound is recorded for five seconds.
If you hold down the shutter button, sound is recorded until you release the shutter button for up to 40 seconds.

The number of images that you can record on a floppy disk or "Memory Stick" (8 MB) in VOICE mode

Image size	Number of images*	
	Floppy disk	"Memory Stick"
1600×1200	Approx. 3	Approx. 7
1600 (3:2)	Approx. 3	Approx. 7
1600 (ECM)	Approx. 5	—
1024×768	Approx. 6	Approx. 17
640×480	Approx. 12	Approx. 34

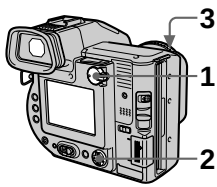
∗ When recording 5-second audio.

To return to normal recording mode

Select [NORMAL] in step **2**.

Recording text documents (TEXT)

Text is recorded in GIF format to provide a clear image.



1 Set the PLAY/STILL/MOVIE selector to STILL.

2 Select [FILE], [REC MODE], and then [TEXT] from the menu.

3 Record the image.

The number of images that you can record on a floppy disk or "Memory Stick" (8 MB) in TEXT mode

Image size	Number of images*	
	Floppy disk	"Memory Stick"
1600×1200	Minimum 4	Minimum 25
1600 (3:2)	Minimum 5	Minimum 28
1600 (ECM)	Minimum 4	—
1024×768	Minimum 11	Minimum 61
640×480	Minimum 28	Minimum 160

∗ The maximum number of recordable images depends on the document condition, such as the amount of text portions.

To return to normal recording mode

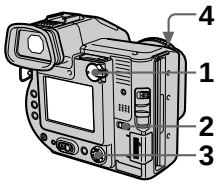
Select [NORMAL] in step **2**.

Notes

- If the subject is not evenly illuminated, you may be unable to record a clear image.
- Writing and reading data take more time than normal recording.

Recording still images as uncompressed files (TIFF)

This mode simultaneously records still images in both TIFF format (uncompressed) and JPEG format (compressed) **when using a "Memory Stick."**



1 Set the PLAY/STILL/MOVIE selector to STILL.

2 Set the MS/FD selector to MS.

3 Select [FILE], [REC MODE], and then [TIFF] from the menu.

4 Record the image.

The number of images that you can record on a "Memory Stick" (8 MB) in TIFF mode

Image size	Number of images
1600×1200	1
1600 (3:2)	1

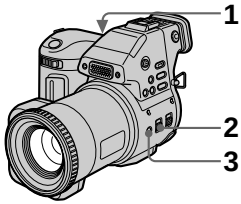
To return to normal recording mode

Select [NORMAL] in step **3**.

Notes

- JPEG images are recorded in the image size selected by the [IMAGE SIZE] menu (page 48). TIFF images are recorded in [1600×1200] size other than when [1600 (3:2)F] is selected.
- Writing data takes more time than in normal recording.

Recording images in macro



1 Set the PLAY/STILL/MOVIE selector to STILL or MOVIE.

2 Set the FOCUS AUTO/ MANUAL switch to AUTO.

3 Press (macro).

The (macro) indicator appears on the LCD screen or on the finder. With the zoom lever set to the W side, you can shoot a subject that is about 2 cm (13/16 inch) away from the lens surface in macro mode.

To return to normal recording mode

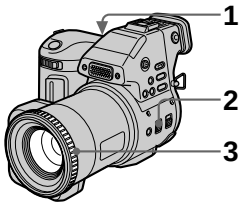
Press again. The indicator disappears.

Notes

- You cannot record images in macro with the following PROGRAM AE modes:
  —Landscape mode
  —Panfocus mode
- You cannot record images in macro if the indicator appears.

Focusing manually

Normally the focus is automatically adjusted. This function is useful when the auto focus does not work well such as in dark places.



1 Set the PLAY/STILL/MOVIE selector to STILL or MOVIE.

2 Set the FOCUS AUTO/ MANUAL switch to MANUAL.
The (manual focus) indicator appears on the LCD screen or on the finder.

3 Turn the focus ring to achieve a sharp focus.
When you shoot still images, the image on the LCD screen or on the finder is enlarged (double*) and the focal point information appears while the focus is being adjusted. After adjusting, the image returns to normal size. The range is from 2 cm (13/16 inch) to ∞ (infinity).

* When using the digital zoom function, the enlarged image will be less than double size.

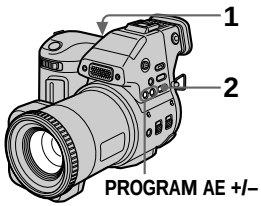
To reactivate auto focusing

Set the FOCUS AUTO/MANUAL switch to AUTO.

Notes

- Focal point information may not completely show the correct distance. Use the information as a guide.
- Focal point information does not show the correct distance when attaching the conversion lens.
- If you shoot a subject within 0.8 m (31 1/2 inches) while the zoom lever is set to T side, you cannot get a clear focus. In such cases, the focal point information flashes. Move the zoom lever to the W side until the indicator stops flashing.
- You cannot use this function if you have selected the Panfocus mode in the PROGRAM AE function.

Using the PROGRAM AE function



1 Set the PLAY/STILL/MOVIE selector to STILL or MOVIE.

2 Press PROGRAM AE repeatedly to select the desired PROGRAM AE mode.

AE A Aperture priority mode
For making the subject stand out against an unclear background or making both the subject and the background stand out clearly. Press PROGRAM AE +/– repeatedly to select an aperture value in 9 steps from F2.8 to F11.

AE S Shutter speed priority mode
For recording a sharp picture of a fast-moving subject or recording the flow of motion of a moving subject.
Press PROGRAM AE +/– repeatedly to select a shutter speed in 17 steps from 8" to 1/500 when recording a still image, or in 11 steps from 1/8 to 1/500 when recording a moving image.

Twilight mode
Suppresses the blurring of colors of a bright subject in a dark place so that you can record the subject without losing the dark atmosphere of the surroundings.

Twilight plus mode
Increases the effectiveness of the twilight mode function.

Landscape mode
Focuses only on a distant subject to record landscapes, etc.

Panfocus mode
Changes the focus quickly and simply from a close subject to a distant subject.

To cancel PROGRAM AE

Press PROGRAM AE repeatedly until the indicator on the LCD screen or on the finder goes out.

Notes

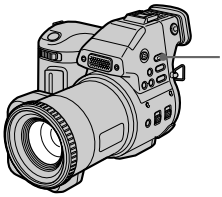
- You can focus only on distant subjects in Landscape mode.
- In Panfocus mode, the zoom position is set to the W side and focus is fixed.
- When you record in Twilight plus mode, we recommend that you use a tripod to prevent shaking.
- Set the forced flash ϟ when you use the flash in the following modes:
  – Twilight mode
  – Twilight plus mode
  – Landscape mode
- You cannot use the PROGRAM AE function when [REC MODE] is set to [TEXT].
- If the setting is not appropriate in aperture priority mode and shutter speed priority mode, the setting value indicator on the LCD screen or on the finder flashes. In this case, reset the value.

Tips

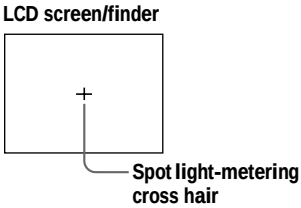
Under normal recording conditions, the camera automatically makes various adjustments, such as those for the focus, iris, exposure, and white balance, as it shoots. However, you may not be able to carry out your desired shooting depending on shooting conditions. The program AE function provides you with near-optimum adjustments to suit your shooting situation.

Using the Spot light-metering function

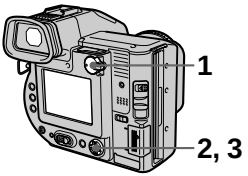
Select this mode when there is backlight or when there is strong contrast between the subject and the background, etc.



Press SPOT METER to activate the spot light-metering function. Position the point you want to record at the spot light-metering cross hair.



Adjusting the exposure (EXPOSURE)



1 Set the PLAY/STILL/MOVIE selector to STILL or MOVIE.

2 Select [CAMERA] and then [EXPOSURE] from the menu.

3 Select the desired exposure value.

Adjust the exposure value while checking the brightness of the background. You can select values ranging from +2.0 EV to -2.0 EV in steps of 1/3 EV.

Note

If a subject is under extremely bright or dark situations, or the flash is used, the exposure adjustment may not be effective.

Tips

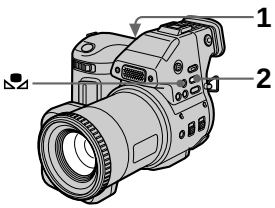
Normally, the camera automatically adjusts the exposure. If the color of the image is too dark or bright as illustrated below, we recommend that you adjust the exposure manually. When the color of the image is too dark, set it toward +, and when it is too bright, set it toward –.

Set the exposure toward +

Set the exposure toward –

Adjusting the white balance (WHITE BALANCE)

Normally the white balance is automatically adjusted.



1 Set the PLAY/STILL/MOVIE selector to STILL or MOVIE.

2 Press WHITE BALANCE repeatedly to select the desired white balance setting.

One-push white balance ( )
Adjusting the white balance depending on the light source

OUT DOOR ( )
Recording a sunrise/sunset, night scene, neon signs, or fireworks

IN DOOR ( )
- Places where the lighting condition changes quickly
- Under bright lighting such as photography studios
- Under sodium or mercury lamps

AUTO (No indicator)
Adjusts the white balance automatically

To shoot in one-push white balance mode

① Press WHITE BALANCE repeatedly until the indicator appears.
② Shoot a white object such as paper full under the same situation you will shoot.
③ Press .
The indicator flashes quickly. When the white balance has been adjusted and stored in the memory, the indicator stops flashing.

To reactivate auto adjustment

Select [AUTO] in step **2**.

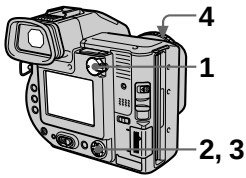
Note

- Select [AUTO] when shooting with fluorescent lighting.
- The indicator means:
  Slow flashing: white balance is not set.
  Quick flashing: white balance is being adjusted (after you pressed).
  Lit steady: white balance has been set.
- If the indicator keeps flashing even when you press , record in automatic white balance mode.

Tips

The image is susceptible to lighting conditions. The image looks blue under sunlight in the summer, and looks red under mercury lamps. Human eyes can resolve these problems. However, the camera cannot resolve the problem by making adjustments. Normally, the camera adjusts it automatically, but, if the image appears in strange colors, we recommend that you change the white balance mode.

Recording the date and time on the still image (DATE/TIME)



1 Set the PLAY/STILL/MOVIE selector to STILL.

2 Select [EFFECT] and then [DATE/TIME] from the menu.

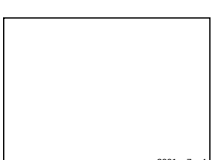
3 Select the date and time.

DAY & TIME
Imposes the date, hour, and minute.

DATE
Imposes the year, month, and day.

OFF
Does not impose the date and time.

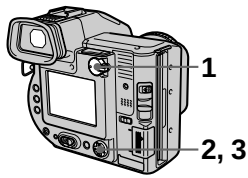
4 Record the image.
The date and time do not appear on the LCD screen or on the finder during shooting. These appear during playback only.



Notes

- If you select [DATE] in step **3**, the date is imposed onto the image in the order selected with "Setting the date and time" (page 14).
- The date and time are not imposed onto Clip Motion images.

Enjoying picture effects (PICTURE EFFECT)



1 Set the PLAY/STILL/MOVIE selector to STILL or MOVIE.

2 Select [EFFECT] and then [P. EFFECT] from the menu.

3 Select the desired mode.

SOLARIZE
The light contrast is clearer and the picture looks like an illustration.

B&W
The picture is monochrome (black and white).

SEPIA
The picture is sepia-toned like an old photograph.

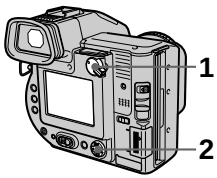
NEG.ART
The color and brightness of the picture are reversed as in a negative.

OFF
Does not use the picture effect function.

To cancel picture effect

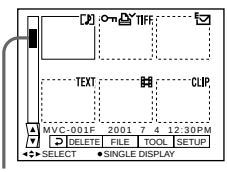
Select [OFF] in step **3**.

Playing back six images at once (INDEX)



1 Set the PLAY/STILL/MOVIE selector to PLAY.

2 Select [INDEX] on the LCD screen or on the finder.
Six images are displayed at once (index screen).
Only the first frame of Clip Motion files is displayed.

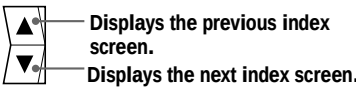


This shows the position of the currently displayed images relative to all the recorded images.

The following marks are displayed on each image according to the image type and settings.
: Moving image file
: VOICE mode file
: E-mail file
: Print mark
: Protect mark
TEXT: TEXT file
TIFF: TIFF file
CLIP: Clip Motion file
(No mark): Normal recording (no settings)

To display the next (previous) index screen

Select ▲/▼ at the lower-left on the LCD screen or on the finder.



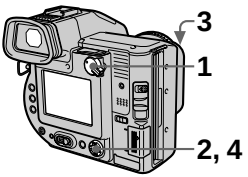
To return to normal playback (single image)

- Select the desired image with the control button.
- Select ⮌ (Return).

Note

When viewing an image recorded in Clip Motion or TEXT mode on the INDEX screen, the image may appear different from the actual image.

Enlarging a part of the still image (Zoom and trimming)



1 Set the PLAY/STILL/MOVIE selector to PLAY.

2 Display the image to be enlarged.

3 Zoom in/out the image with the zoom lever.

The zoom scaling indicator appears on the LCD screen or on the finder.

4 Press the control button repeatedly to select the desired portion of the image.

▲: The image moves downward
▼: The image moves upward
◀: The image moves rightward
▶: The image moves leftward

To return to the normal size

Zoom out with the zoom lever until the zoom scaling indicator (🔍 ×1.1) disappears from the screen, or simply press the center ●.

To record an enlarged image (trimming)

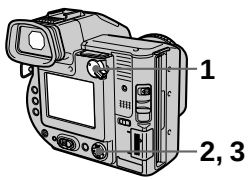
① Enlarge the image.
② Press the shutter button. The image is recorded at 640×480 size and the image on the LCD screen or on the finder returns to the normal size after recording.

Notes

- You cannot trim moving images, still images recorded in Clip Motion, TEXT mode, or uncompressed images.
- Zoom scaling is up to 5× regardless of the original image size.
- The quality of enlarged images may be deteriorated.
- The original data is left even if you enlarge the image.
- The enlarged image is recorded as the newest file.

Playing back the still images in order (SLIDE SHOW)

This function is useful for checking the recorded images or for presentations, etc.



1 Set the PLAY/STILL/MOVIE selector to PLAY.

2 Select [FILE] and then [SLIDE SHOW] from the menu.
Set the following items.

INTERVAL
You can select from 1 min (one minute), 30 sec (30 seconds), 10 sec (10 seconds), 5 sec (5 seconds), or 3 sec (3 seconds).

REPEAT
ON: Plays back images in a continuous loop (When using the floppy disk, the slide show stops approximately 20 minutes*) until [RETURN] is selected.
OFF: After all images have been played back, the slide show ends.

* The slide show does not end until all the images are played back, even if it takes more than 20 minutes.

3 Select [START].
The slide show begins.

To cancel the slide show

Select [CANCEL] in step **2** or **3**.

To skip to the next/previous image during the slide show

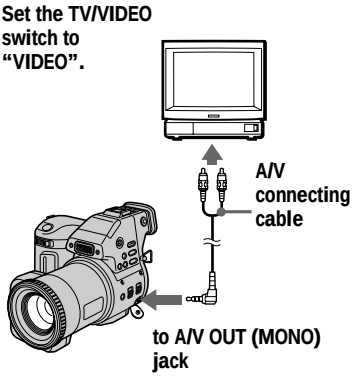
Select ⏮/⏭ at the lower-left on the LCD screen or on the finder.

Note

The interval setting time may vary depending on the image size.

Viewing images on a TV screen

Before connecting your camera, be sure to turn off the TV.



1 Connect the A/V connecting cable to the A/V OUT (MONO) jack of your camera and to the audio/video input jacks of the TV.

If your TV has stereo type input jacks, connect the audio plug of the A/V connecting cable to the Lch jack.

2 Turn on the TV and start playback on your camera.

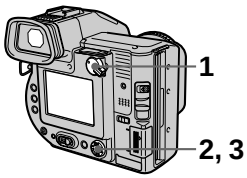
The playback image appears on the TV screen.

Note

You cannot use a TV that has an antenna (aerial) connector only.

Preventing accidental erasure (PROTECT)

The (protect) indicator appears on protected images.



In single mode

1 Set the PLAY/STILL/MOVIE selector to PLAY, then display the image to be protected.

2 Select [FILE], [PROTECT], and then [ON] from the menu.
The displayed image is protected and the indicator appears.

To release protection

Select [OFF] in step **2**.

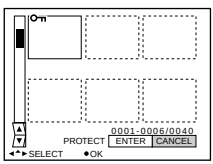
In INDEX mode

1 Set the PLAY/STILL/MOVIE selector to PLAY, then display the INDEX screen.

2 Select [FILE], [PROTECT], and then [ALL] or [SELECT] from the menu.

3 When you select [ALL]
Select [ON].
All the images in the floppy disk or "Memory Stick" are protected.

When you select [SELECT]
Select all the images to be protected with the control button, then select [ENTER]. The selected images are protected.

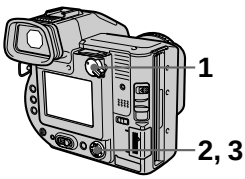


To release protection

If you selected [ALL] in step **2**, select [OFF]. If you selected [SELECT] in step **2**, select the images to be unprotected with the control button, then select [ENTER].

Deleting images (DELETE)

Protected images cannot be deleted.



In single mode

1 Set the PLAY/STILL/MOVIE selector to PLAY, then display the image to be deleted.

2 Select [DELETE] and then [OK] from the menu.
The image is deleted.

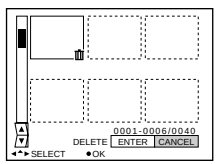
In INDEX mode

1 Set the PLAY/STILL/MOVIE selector to PLAY, then display the INDEX screen.

2 Select [DELETE] and then [ALL] or [SELECT] from the menu.

3 When you select [ALL]
Select [ENTER].
All the unprotected images are deleted.

When you select [SELECT]
Select all the images to be deleted with the control button, then select [ENTER]. The 🗑 (delete) indicator appears on the selected images and these images are deleted.



To cancel deleting

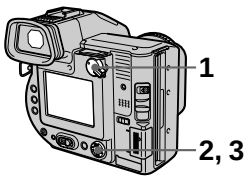
Select [CANCEL] in step **2** or **3**.

Note

If there are files on the “Memory Stick” with names having the same last 4 digits as the file name of the image to be deleted, these files are also deleted at the same time.

Changing the recorded still image size (RESIZE)

Use this function when you need a small-size image to attach it to an E-mail. The original image is retained even after resizing. The resized image is recorded as the newest file.



1 Set the PLAY/STILL/MOVIE selector to PLAY, then display the image of which you want to change the size.

2 Select [TOOL] and then [RESIZE] from the menu.

3 Select the desired size.

- When the MS/FD selector is set to **FD**
  1600×1200, 1024×768, 640×480.
- When the MS/FD selector is set to **MS**
  1600 (FINE), 1024 (FINE), 640 (FINE).

The resized image is recorded, then the display returns to the image display before resizing.

To cancel changing the size

Select [CANCEL] in step **3**.

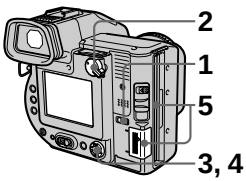
Notes

- You cannot change the size of images recorded in TEXT mode, moving images, uncompressed images, or Clip Motion images.
- When you change from a small size to a large size, the picture quality deteriorates.

Copying images (COPY)

Copies images to another floppy disk or “Memory Stick.”

In single mode



1 Select the media using the MS/FD selector.

2 Set the PLAY/STILL/MOVIE selector to PLAY, then display the image to be copied.

3 Select [TOOL], and then [COPY] from the menu.

4 Select the media that the image will be copied onto.

- When the MS/FD selector is set to **FD**.
  FD → FD: Copies to the floppy disk
  FD → MS: Copies to the “Memory Stick”
- When the MS/FD selector is set to **MS**.
  MS → MS: Copies to the “Memory Stick”
  MS → FD: Copies to the floppy disk

When you select [FD → MS] or [MS → FD], the camera automatically starts copying if the floppy disk and “Memory Stick” are inserted.

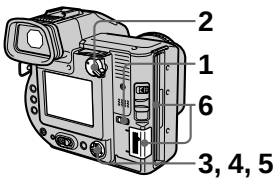
5 Insert or change the floppy disk or “Memory Stick” following the messages on the LCD screen or on the finder.

“RECORDING” appears. When copying is completed, “COMPLETE” appears.
To end copying, select [EXIT].

To continue copying the image to other floppy disks or “Memory Stick”s

After “COMPLETE” appears in step **5**, select [CONTINUE] and repeat step **5** above.

In INDEX mode



1 Select the media using the MS/FD selector.

2 Set the PLAY/STILL/MOVIE selector to PLAY, then display the INDEX screen.

3 Select [TOOL], and then [COPY] from the menu.

4 Select the media that the image will be copied onto.

- When the MS/FD selector is set to **FD**.

  FD → FD: Copies to the floppy disk
  FD → MS: Copies to the "Memory Stick"

- When the MS/FD selector is set to **MS**.

  MS → MS: Copies to the "Memory Stick"
  MS → FD: Copies to the floppy disk

5 When you select [ALL]*
Select [OK].

* [ALL] can be selected only when selecting [FD → FD] or [FD → MS].

When you select [SELECT]**
Select all the images to be copied with the control button. The ✓ mark appears on the selected images and then select [ENTER].

** When selecting [MS → FD], the necessary number of floppy disks appears after selecting [ENTER]. Select [OK] again.

6 Insert or change the floppy disk or "Memory Stick" following the messages on the LCD screen or on the finder.
"RECORDING" appears. When copying is completed, "COMPLETE" appears.
To end copying, select [EXIT].

To continue copying the image to other floppy disks or "Memory Stick"s

After "COMPLETE" appears in step **6**, select [CONTINUE] and repeat step **6**.

When selecting [MS → FD], if the amount of total images that will be copied is too large to copy to one floppy disk, the images will be copied using multiple floppy disks.

To cancel copying partway

Select [CANCEL].

Notes

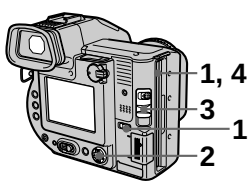
- You cannot copy uncompressed images.
- You cannot copy the image that is bigger than 1.4 MB.
- You cannot copy the images that the total amount of the images is bigger than 1.4 MB. If "NOT ENOUGH MEMORY" appears or ✓ flashes on the INDEX screen, cancel some images to copy and try again.
- If you eject and insert the floppy disk or "Memory Stick" without selecting [EXIT] after "COMPLETE" appears, the image will be copied.
- The number of floppy disks that is needed for copying is as a guide, which is displayed when selecting [MS → FD].

Copying all the information on your floppy disk (DISK COPY)

You can copy to another disk not only the images you have recorded with your camera but also various files you have created in other software with your computer.

Notes

- Once you carry out DISK COPY, all information saved on the recipient floppy disk is erased to be replaced by newly written data including the protected image data. Check the contents of the recipient disk before copying the disk.
- Be sure to use the floppy disk that has been formatted by this camera to carry out DISK COPY (page 72).



1 Set the MS/FD selector to FD, then insert the floppy disk to be copied.

2 Select [FILE], [DISK TOOL], [DISK COPY], and then [OK] from the menu.
"DISK ACCESS" appears.

3 When "CHANGE FLOPPY DISK" is displayed, eject the floppy disk.
"INSERT FLOPPY DISK" appears.

4 Insert another floppy disk.
"RECORDING" appears. When copying is completed, "COMPLETE" appears.
To end copying, select [EXIT].

To continue copying to other floppy disks

After "COMPLETE" appears in step **4**, select [CONTINUE] and repeat steps **3** and **4** above.

To cancel copying partway

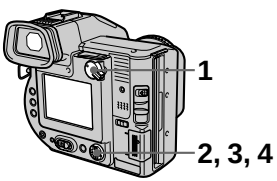
Select [CANCEL].

Note

If you eject and insert the floppy disk without selecting [EXIT] after "COMPLETE" appears, DISK COPY will be carried out onto the floppy disk.

Selecting still images to print (PRINT MARK)

You can mark a print mark on still images recorded with your camera. This mark is convenient when you have images printed at a shop that conforms with the DPOF (Digital Print Order Format) standard.



In single mode

1 Set the PLAY/STILL/MOVIE selector to PLAY and display the image you want to print.

2 Select [FILE], [PRINT MARK], and then [ON] from the menu.
The (print) mark is marked on the displayed image.

To unmark the print mark

Select [OFF] in step **2**.

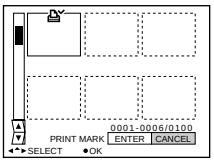
In INDEX mode

1 Set the PLAY/STILL/MOVIE selector to PLAY, then display the INDEX screen.

2 Select [FILE], [PRINT MARK], and then [SELECT] from the menu.

3 Select the images to be marked with the control button.

4 Select [ENTER].
The marks on the selected images change from green to white.



To unmark selected print marks

Select the images to be unmarked in step **3** with the control button, then select [ENTER].

To unmark all the print marks

Select [FILE], [PRINT MARK], [ALL], and then [OFF] from the menu. The marks on all images are unmarked.

To print out using the FVP-1 Mavica Printer

Set PRESET SELECT SW to PC on the printer.

Notes

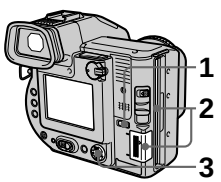
- You cannot mark moving images, Clip Motion images or images recorded in TEXT mode.
- If you mark an image recorded in TIFF mode with a print mark, only the uncompressed image is printed, and the JPEG image recorded at the same time is not printed.

Format

When you format a floppy disk or "Memory Stick," all data stored on the floppy disk or "Memory Stick" will be deleted. Check the contents of the floppy disk or "Memory Stick" before formatting.

Note

Even if images are protected, these images will be deleted.



1 Select the floppy disk or "Memory Stick" using the MS/FD selector.

2 Insert only the floppy disk or "Memory Stick" you want to format.
Be sure to insert only the media you want to format.

3 Select [FILE] from the menu.
- When formatting **a floppy disk**
  Select [DISK TOOL], [FORMAT], and then [OK] from the menu.
- When formatting **a "Memory Stick"**
  Select [FORMAT], and then [OK] from the menu.

To cancel formatting

Select [CANCEL] in step **3**.

Notes

- **Format the floppy disk or "Memory Stick" only using this camera. You cannot format the floppy disk or "Memory Stick" using a computer via the USB cable.**
- When you format, be sure to use a fully charged battery pack or the AC power adaptor as the power source.

Using the camera as an external drive of a computer

Once you connect the camera to a computer using the USB cable, you can use the camera as a floppy disk/ "Memory Stick" drive of a computer. Install the USB driver to the computer beforehand (page 31).

For Windows 98, Windows 98SE, Windows Me, and Windows 2000 Professional Users

1 Connect the camera to the computer using the supplied USB cable.

2 Select the drive type using the MS/FD selector on this camera.

When used as the floppy disk drive, set the MS/FD selector to FD.

When used as the "Memory Stick" drive, set the MS/FD selector to MS.

3 Connect the AC power adaptor and turn on the camera.

4 Open "My Computer" on Windows and check the icon "Removable Disk," then use the camera as an external drive.

Note

When using Windows Me or Windows 2000 Professional, see also page 34.

Precautions

On cleaning

Cleaning the LCD screen or finder
Wipe the screen surface with a cleaning cloth (not supplied) or an LCD cleaning kit (not supplied) to remove fingerprints, dust, etc.

Cleaning the camera surface
Clean the camera surface with a soft cloth slightly moistened with water, then wipe the surface dry. Do not use any type of solvent such as thinner, alcohol or benzene as this may damage the finish or the casing.

After using your camera at the seashore or other dusty locations
Clean your camera carefully. Otherwise, the salty air may corrode the metal fittings or dust may enter the inside of your camera, causing a malfunction.

On floppy disks

To protect data recorded on floppy disks, note the following:

- Avoid storing floppy disks near magnets or magnetic fields such as those of speakers and televisions. Otherwise, permanent erasure of disk data may result.
- Avoid storing floppy disks in areas subject to direct sunlight or sources of high temperature, such as a heating device. Floppy disk warping or damage may result, rendering the disk useless.
- Avoid contact with the disk's surface by opening the disk shutter plate. If the disk's surface becomes blemished, data may be rendered unreadable.
- Avoid getting liquids on the floppy disk.
- Be sure to use a floppy disk case to ensure protection of important data.
- Even when you use a 3.5 inch 2HD floppy disk, image data may not be recorded and/or displayed depending on the using environment. In this case, use a disk of other brand.

On operating temperature

Your camera is designed for use between the temperatures of 0°C to 40°C (32°F to 104°F). Recording in extremely cold or hot places that exceed this range is not recommended.

On moisture condensation

If the camera is brought directly from a cold to a warm location, or is placed in a very damp room, moisture may condense inside or outside the camera. Should this occur, the camera will not operate properly.

Moisture condensation occurs easily when:

- The camera is brought from a cold location such as a ski slope into a warmly heated room.
- The camera is taken from an air-conditioned room or car interior to the hot outdoors, etc.

How to prevent moisture condensation
When bringing the camera from a cold place to a warm place, seal the camera in a plastic bag and allow it to adapt to conditions at the new location over a period of time (about an hour).

If moisture condensation occurs
Immediately eject the floppy disk, then turn off the camera and wait about an hour for the moisture to evaporate. Note that if you attempt to record with moisture remaining inside the lens, you will be unable to record clear images.

On AC power adaptor

- Unplug the unit from the wall outlet (mains) when you are not using the unit for a long time. To disconnect the power cord (mains lead), pull it out by the plug. Never pull the power cord (mains lead) itself.
- Do not operate the unit with a damaged cord (mains lead) or if the unit has been dropped or damaged.
- Do not bend the power cord (mains lead) forcibly, or place a heavy object on it. This will damage the cord (mains lead) and may cause fire or electrical shock.
- Prevent metallic objects from coming into contact with the metal parts of the connecting section. If this happens, a short may occur and the unit may be damaged.
- Always keep metal contacts clean.
- Do not disassemble the unit.
- Do not apply mechanical shock or drop the unit.
- While the unit is in use, particularly during charging, keep it away from AM receivers and video equipment. AM receivers and video equipment disturb AM reception and video operation.
- The unit becomes warm during use. This is not a malfunction.
- Do not place the unit in locations that are:
  — Extremely hot or cold
  — Dusty or dirty
  — Very humid
  — Vibrating

On battery pack

- Use only the specified charger with the charging function.
- To prevent accident from a short circuit, do not allow metal objects to come into contact with the battery terminals.
- Keep the battery pack away from fire.
- Never expose the battery pack to temperatures above 60°C (140°F), such as in a car parked in the sun or under direct sunlight.
- Keep the battery pack dry.
- Do not expose the battery pack to any mechanical shock.
- Do not disassemble nor modify the battery pack.
- Attach the battery pack to the camera securely.
- Charging while some capacity remains does not affect the original battery capacity.

On the built-in rechargeable lithium battery

Your camera is supplied with a built-in rechargeable lithium battery installed so as to retain the date and time, etc., regardless of the setting of the POWER switch. The built-in rechargeable lithium battery is always charged as long as you are using your camera. The battery, however, will get discharged gradually if you do not use your camera. It will be completely discharged in about six months if you do not use your camera at all. Even if the built-in rechargeable lithium battery is not charged, it will not affect the camera operation. To retain the date and time, etc., charge the battery if the battery is discharged.

Charging the built-in rechargeable lithium battery:

- Connect your camera to house current (mains) using the AC power adaptor supplied with your camera, and leave your camera with the power turned off for more than 24 hours.
- Or install the fully charged battery pack in your camera, and leave your camera with the power turned off for more than 24 hours.

If any problem occurs, unplug your camera and contact your nearest Sony dealer.

On "Memory Sticks"

"Memory Stick" is a new compact, portable and versatile IC recording medium with a data capacity that exceeds a floppy disk. "Memory Stick" is specially designed for exchanging and sharing digital data among "Memory Stick" compatible products. Because it is removable, "Memory Stick" can also be used for external data storage.

There are two types of "Memory Sticks": general "Memory Sticks" and "MagicGate Memory Sticks" that are equipped with the MagicGate* copyright protection technology. You can use both types of "Memory Stick" with your camera. However, because your camera does not support the MagicGate standards, data recorded with your camera is not subject to MagicGate copyright protection.

* MagicGate is copyright protection technology that uses encryption technology.

Notes

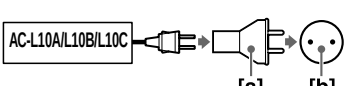
- Do not remove the "Memory Stick" while reading or writing data.
- Data may be damaged if:
  —you remove the "Memory Stick" or turn off your camera while reading or writing data.
  —you use the "Memory Stick" in a location subject to the effects of static electricity or noise.
- Do not attach any other material than the supplied label on the labeling position.
- When you carry or store the "Memory Stick," put it in its supplied case.
- Do not touch the terminals of a "Memory Stick" with your hand or a metal object.
- Do not strike, bend or drop the "Memory Stick."
- Do not disassemble or modify the "Memory Stick."
- Do not allow the "Memory Stick" to get wet.

"Memory Stick", "MagicGate Memory Stick" and are trademarks of Sony Corporation. "MagicGate" and MAGICGATE are trademarks of Sony Corporation.

Using your camera abroad

Power sources

You can use your camera in any country or area with the supplied battery charger within 100 V to 240 V AC, 50/60 Hz. Use a commercially available AC plug adaptor **[a]**, if necessary, depending on the design of the wall outlet (mains) **[b]**.



Watching the playback picture on TV

If you want to view the playback picture on a TV, you need a TV having a video input jack and a video connecting cable.
The color system of the TV must be the same as that of your digital still camera. Check the following list:

NTSC system
Bahama Islands, Bolivia, Canada, Central America, Chile, Columbia, Ecuador, Jamaica, Japan, Korea, Mexico, Peru, Surinam, Taiwan, the Philippines, the U.S.A., Venezuela, etc.

PAL system
Australia, Austria, Belgium, China, Denmark, Finland, Germany, Great Britain, Holland, Italy, Kuwait, Malaysia, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, Thailand, etc.

PAL-M system
Brazil

PAL-N system
Argentina, Paraguay, Uruguay

SECAM system
Bulgaria, Czech Republic, France, Guiana, Hungary, Iran, Iraq, Monaco, Poland, Russia, Slovak Republic, Ukraine, etc.

About “InfoLITHIUM” battery pack

What is the “InfoLITHIUM” battery pack?

The “InfoLITHIUM” battery pack is a lithium-ion battery pack that has functions for communicating information related to operating conditions between your camera and the AC power adaptor.
The “InfoLITHIUM” battery pack calculates the power consumption according to the operating conditions of your camera, and displays the remaining battery time in minutes.

Charging the battery pack

- Be sure to charge the battery pack before you start using your camera.
- We recommend charging the battery pack in an ambient temperature of between 10°C to 30°C (50°F to 86°F) until the POWER ON/OFF (CHG) lamp goes out, indicating that the battery pack is fully charged. If you charge the battery pack outside of this temperature range, you may not be able to efficiently charge the battery pack.
- After charging is completed, either disconnect the AC power adaptor from the DC IN jack on your camera or remove the battery pack.

Effective use of the battery pack

- Battery performance decreases in low-temperature surroundings. So, the time that the battery pack can be used is shorter in cold places. We recommend the following to use the battery pack longer:
  - — Put the battery pack in a pocket close to your body to warm it up, and insert it in your camera immediately before you start taking shots.
  - — Use the large capacity battery pack (NP-F550, optional).
- Frequently using the LCD panel or frequently operating the zoom wears out the battery pack faster. We recommend using the large capacity battery pack (NP-F550, optional).
- Be certain to turn the POWER switch to off when not taking shots or playing back on your camera.
- We recommend have spare batteries handy for two or three times the expected shooting time, and make a trial shots before taking the actual shots.
- Do not expose the battery pack to water. The battery pack is not water-resistant.

Remaining battery time indicator

- If the power goes off although the battery remaining indicator indicates that the battery pack has enough power to operate, charge the battery pack fully again so that the indication on the battery remaining indicator is correct. Note, however, that the correct battery indication sometimes will not be restored if it is used in high temperatures for a long time or left in a fully charged state, or the battery pack is frequently used. Regard the remaining battery time indication as the approximate shooting time.
- The mark indicating there is little remaining battery time sometimes flashes depending on the operating conditions or ambient temperature and environment even if the remaining battery time is 5 to 10 minutes.

How to store the battery pack

- Even if the battery pack is not used for a long time, store it in a dry, cool place after fully charging it once per year and then using the battery pack up on your camera. This is to maintain the battery pack's functions.
- To use the battery pack up on your camera, leave the POWER switch to on in PLAY mode until the power goes off without a floppy disk or a "Memory Stick" inserted.

Battery life

- The battery life is limited. Battery capacity decreases little by little as you use it more and more, and as time passes. When the battery operating time is shortened considerably, a probable cause is that the battery pack has reached the end of its life. Please buy a new battery pack.
- The battery life varies according to how it is stored and operating conditions and environment for each battery pack.

Troubleshooting

If you experience trouble with your camera, first check the following items. Should your camera still not operate properly after you have made these checks, consult your Sony dealer or local authorized Sony service facility. **If code displays (C:□□:□□) appear on the LCD screen or on the finder, the self-diagnosis display function is working (page 87).**

Symptom	Cause and/or Solution
Your camera does not work.	• You are not using an "InfoLITHIUM" battery pack. →Use an "InfoLITHIUM" battery pack (page 9). • The floppy disk is not inserted properly. →Eject the disk, and insert it again (page 16). • The battery level is too low. (The indicator appears.) →Charge the battery pack fully (page 10). • The AC power adaptor is not connected securely. →Connect it securely to the DC IN jack and a wall outlet (mains) (page 10, 13). • The malfunction occurs inside the camera. →Turn off the power, and turn on after one minute, then check that the camera works properly.
Your camera cannot record images.	• The PLAY/STILL/MOVIE selector is set to PLAY. →Set it to STILL or MOVIE (pages 18, 25). • No floppy disk is inserted into your camera. →Insert a floppy disk (page 16). • The tab on the disk is set to the unrecordable position. →Set it to the recording position (page 16). • No "Memory Stick" is inserted into your camera. →Insert a "Memory Stick" (page 17). • The write-protect switch on the "Memory Stick" is set to LOCK. →Set it to the recording position.
The picture is out of focus.	• Your camera is not in macro recording mode when you shoot a subject that is about 3 to 25 cm (1 3/16 to 9 7/8 inches) away from the lens. →Set the macro recording mode (page 54). →Move the zoom lever to the W side.
The resizing function does not work.	• You cannot resize moving images, text images, Clip Motion images, and uncompressed images.

Symptom	Cause and/or Solution
You cannot display a print mark.	• You cannot display print marks on moving images, text images and Clip Motion images.
The picture is noisy.	• Your camera is placed near a TV or other equipment that uses strong magnets. →Move your camera away from the TV, etc.
The picture is too dark.	• You are shooting a subject with a light source behind the subject. →Adjust the exposure (page 58). • The brightness of the LCD screen is too low. →Adjust the brightness of the LCD screen (page 20).
The flash does not work.	• The flash is set to ⊗. →Set the flash to (no indication), 👁, or ϟ (page 23). • The camera is in one of the following PROGRAM AE modes: Twilight, Twilight plus, or Landscape. →Cancel the PROGRAM AE function or set the flash to ϟ (page 23, 56). • The PLAY/STILL/MOVIE selector is set to MOVIE. →Set it to STILL. • The flash is not popped up. →Pop up the flash (page 23).
The date and time are recorded incorrectly.	• The date and time are not set correctly. →Set the correct date and time (page 14).
Vertical streaks appear when you are shooting a very bright subject.	• This is called the smear phenomenon. →This is not a malfunction.
The zoom does not work.	• PROGRAM AE is set to the Panfocus mode. →Cancel the Panfocus mode (page 56).
Digital zoom does not function.	• You cannot use digital zoom when recording moving pictures. • Digital zoom is set to [OFF]. →Set digital zoom to [ON] at the menu.
The image is in monochrome.	• You shot the image in TEXT mode. →Cancel the TEXT mode (page 52). • The picture effect is set to B&W. →Cancel the B&W mode (page 60).
The image cannot be played back on a computer.	→Consult the computer or software manufacturer.

Symptom	Cause and/or Solution
The image and sound break off when you play back an image on a computer.	• You are playing back the file from the floppy disk or "Memory Stick." →Copy the file to the hard disk of the computer and then play back the file from the hard disk (pages 29, 34).
Your camera cannot delete an image.	• The image is protected. →Cancel the protection (page 65).
The power turns off suddenly.	• With the PLAY/STILL/MOVIE selector set to STILL or MOVIE, if you do not operate the camera for about three minutes while the power is on, the camera turns off automatically to prevent wearing down the battery pack. →Turn on the camera. • The battery pack is discharged. →Replace it with a fully charged battery pack.
The image does not appear on the TV screen.	• The VIDEO OUT setting of your camera is incorrect. →Change the setting (page 47).
The slide show function stops automatically.	• The slide show function stops after about 20 minutes when using a floppy disk. →To continue the slide show, select [START] again (page 63).
You cannot use the PROGRAM AE function.	• The camera is set to TEXT mode. →Cancel the TEXT mode (page 52).
The macro function does not work.	• The camera is in manual focus mode. →Set it to auto focus mode (page 55). • PROGRAM AE is set to the Panfocus mode. →Cancel the Panfocus mode (page 56).

Symptom	Cause and/or Solution
Your computer does not recognize your camera.	• The battery level is low. →Use the AC power adaptor (page 13). • The camera is turned off. →Turn on the camera. • The USB cable is not connected firmly. →Disconnect the USB cable, and connect it again firmly. Make sure that “USB MODE” is displayed on the LCD screen or on the finder (page 31). • The USB connectors on your computer are connected to other equipment besides the keyboard, the mouse, and your camera. →Disconnect the USB cables except for the ones connected to the keyboard, the mouse, and your camera. • The position of the MS/FD selector is not set to the proper position for the media being used. →Set the MS/FD selector to the proper position. • The USB driver is not installed. →Install the USB driver (page 31). • **For Windows 98, Windows 98SE, Windows Me and Windows 2000 Professional users** Since the camera is connected to a computer with the USB cable before installing the USB driver, the drive is not recognized properly by the computer. →Delete the drive which is not recognized properly, then install the USB driver. For details, see the procedure below.

Reinstall the USB driver when using Windows 98, Windows 98SE, Windows Me and Windows 2000 Professional

1 Turn on your computer and allow Windows to load.

2 Connect the USB jack on the camera and the computer with the supplied USB cable.

3 Insert a media and set the MS/FD selector to the appropriate position according to the media inserted.

4 Connect the AC power adaptor to your camera and then to a wall outlet (mains), and turn on the power of your camera.

5 Open “Device Manager” on Windows.

For Windows 98, Windows 98SE and Windows Me users:

① Open [Control Panel] from [My Computer], then double-click [System].

② System properties is displayed. Click the [Device Manager] tab located at the top.

③ Click [SonyDSC] in [Other devices], then click the [Delete (E)] button located at the lower-right corner.

For Windows 2000 Professional users:

***** Log in with the permission of administrator.

① Open [Control Panel] from [My Computer], then double-click [System].

② System properties is displayed. Click the [Hardware] tab located at the top, then click the [Device Manager (D)] button.

③ Click [View] in [Device Manager], then click [Devices by type (E)].

④ Right-click [SonyDSC] in [Other devices], then click [Delete (E)].

6 After the message appears to verify that you delete the device manager, click the [OK] button.

7 Turn off the camera, disconnect the USB cable, and restart the computer.

8 Install the USB driver in the supplied CD-ROM to the computer following the procedure on page 31. Perform all steps without skipping.

Battery packs

Symptom	Cause and/or Solution
The battery pack cannot be charged.	• The power of the camera is turned on. →Turn off the power of the camera (page 10).
The battery life is short.	• You are recording/playing back images under extremely cold temperatures. • The battery pack is not charged enough. →Charge the battery pack fully. • The battery pack is dead. →Replace the battery pack with a new one.

Symptom	Cause and/or Solution
The indication of the battery remaining time is not proper, or the power is immediately turned off even if the battery remaining indicator indicates that the battery level is sufficient.	• You are using the camera for many hours under extremely hot or cold temperatures. • The battery pack is dead. →Replace the battery pack with a new one (page 9). • The battery level is too low. →Install the fully charged battery pack (page 9, 10). • A deviation has occurred in the remaining battery time. →Charge the battery pack fully (page 10).
The POWER ON/OFF (CHG) lamp flashes when charging a battery pack.	• A malfunction has occurred in the battery pack. →Contact your Sony dealer or local authorized Sony service facility.
The POWER ON/OFF (CHG) lamp does not light up when charging a battery pack.	• The AC power adaptor is not connected. →Connect the power cord firmly to a wall outlet (mains) (page 10). • The battery pack is not installed properly. →Install it properly (page 9). • Charging of the battery pack is complete.

Warning and notice messages

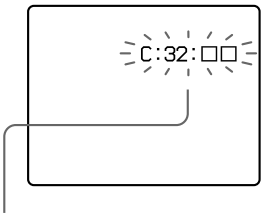
Various messages appear on the LCD screen or on the finder. Check the corresponding descriptions in the following list.

Message	Meaning
DRIVE ERROR	There is trouble with the disk drive.
SYSTEM ERROR	Turn the power off and on again.
NO DISK	No disk is inserted.
NO MEMORY STICK	No “Memory Stick” is inserted.
FORMAT ERROR	• The floppy disk loaded is not MS-DOS formatted (512 bytes×18 sectors). • Failed to format the “Memory Stick.” • The Floppy Disk Adaptor for Memory Stick is inserted.
MEMORY STICK ERROR	The inserted “Memory Stick” cannot be used with your camera, or the “Memory Stick” is damaged or not inserted correctly.
DISK PROTECT	The tab on the disk is set to the unrecordable position.
MEMORY STICK LOCKED	The write-protect switch on the “Memory Stick” is set to the LOCK position.
DISK FULL	The disk is full.
NO MEMORY SPACE	The capacity of the “Memory Stick” is not sufficient to record images.
NO FILE	No image is recorded on the disk.
FILE ERROR	Trouble has occurred during playback.
FILE PROTECT	The image is protected.
DISK ERROR	A 2DD floppy disk is inserted, or there is trouble with the disk.
DIRECTORY ERROR	A directory with the same name already exists.
NOT ENOUGH MEMORY	The remaining capacity of the floppy disk or “Memory Stick” is not enough to copy the image.
IMAGE SIZE OVER	You tried to play back images with an image size larger than the maximum playback size of this camera.

Message	Meaning
INVALID OPERATION	You are playing back a file that was created on equipment other than your camera.
for “InfoLITHIUM” battery only	The battery is not the “InfoLITHIUM” type.
	The image is protected.
	The battery level is too low. When the remaining time is about 5 to 10 minutes, may flash depending on the battery pack used, operating conditions, or the environment.

Self-diagnosis display

Your camera has a self-diagnosis display. This function displays the camera condition on the LCD screen or on the finder with a combination of a letter and four digits of numbers. If this appears, check the following code chart. The code informs you of the camera's current condition. The last two digits (indicated by □□) will differ depending on the state of the camera.



Self-diagnosis display

- C: □□: □□
  You can repair the camera yourself.
- E: □□: □□
  Contact your Sony dealer or local authorized Sony service facility.

Code	Cause and/or Corrective Action
C:32:□□	• There is trouble with the disk drive. →Turn the power off and on again.
C:13:□□	• An unformatted floppy disk or "Memory Stick" is inserted. →Format the floppy disk or "Memory Stick." (page 72) • A floppy disk or "Memory Stick" not compatible with this camera is inserted. →Change the floppy disk or "Memory Stick." (pages 16, 17)
E:61:□□ E:91:□□	• A camera malfunction that you cannot repair has occurred. →Contact your Sony dealer or local authorized Sony service facility and inform them of the 5-digit indication. (example: E:61:10)

If you are unable to rectify the problem even if you try corrective actions a few times when C:□□:□□ is indicated, contact your Sony dealer or local authorized Sony service facility.

Specifications

System

Image device
6.64 mm (1/2.7 type) color CCD

Lens
10× zoom lens
f = 6.0 – 60.0 mm (1/4 – 2 3/8 inches)
(39 – 390 mm (1 9/16 – 15 3/8 inches) when converted into a 35 mm still camera)
F = 2.8

Exposure control
Automatic exposure

White balance
Automatic, Indoor, Outdoor, One-push

Data system
Movie: MPEG
Still: JPEG, GIF (in TEXT mode, Clip Motion), TIFF
Audio with still image: MPEG (Monaural)

Recording medium
Floppy disk:
3.5 inch 2HD MS-DOS format (1.44 MB)
"Memory Stick"

Flash
Recommended recording distance:
0.6 m to 2.5 m (23 5/8 inches to 8 1/3 feet)

Input and Output connector

A/V OUT (MONO) (Monaural)
Minijack Video:
1 Vp-p, 75 Ω, unbalanced, sync negative
Audio: 327 mV (at a 47 kΩ load)
Output impedance: 2.2 kΩ

ACC jack
Minijack

USB jack
mini-B

LCD screen

LCD panel
TFT (Thin Film Transistor active matrix) drive

Total number of dots
123 200 (560×220) dots

Finder

LCD panel
TFT (Thin Film Transistor active matrix) drive

Total number of dots
180 000 (800×225) dots

General

Application
Sony battery pack NP-F330 (supplied)/F550

Power requirements
8.4 V

Power consumption (During shooting)
4.2 W (When using the LCD screen)
3.8 W (When using the finder)

Operating temperature
0°C to 40°C (32°F to 104°F)

Storage temperature
–20°C to +60°C (–4°F to +140°F)

Dimensions (Approx.)
127×124×184 mm (5×5×7 1/4 inches) (w/h/d)

Mass (Approx.)
990 g (2 lb 3 oz) (including NP-F330 battery pack, floppy disk/"Memory Stick" and lens cap, etc.)

Built-in microphone
Electret condenser microphone

Built-in speaker
Dynamic speaker

AC-L10A/L10B/L10C AC power adaptor

Power requirements
100 to 240 V AC, 50/60 Hz

Rated output voltage
DC 8.4 V, 1.5 A in operating mode

Operating temperature
0°C to 40°C (32°F to 104°F)

Storage temperature
–20°C to +60°C (–4°F to +140°F)

Dimensions (Approx.)
125×39×62 mm (5×1 9/16× 2 1/2 inches) (w/h/d)

Mass (Approx.)
280 g (10 oz)

NP-F330 battery pack

Battery type
Lithium ion

Maximum output voltage
DC 8.4 V

Mean output voltage
DC 7.2 V

Capacity
5.0 Wh (700 mAh)

Operating temperature
0°C to 40°C (32°F to 104°F)

Dimensions (Approx.)
38.4×20.6×70.8 mm (1 9/16×13/16×2 7/8 inches) (w/h/d)

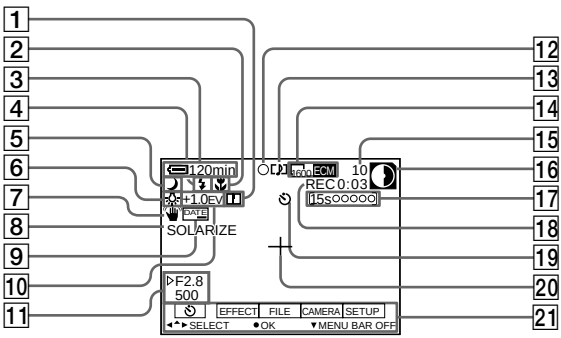
Mass (Approx.)
70 g (2 oz)

Accessories

AC-L10A/L10B/L10C AC power adaptor (1)
Power cord (mains lead) (1)
USB cable (1)
NP-F330 battery pack (1)
A/V connecting cable (1)
Shoulder strap (1)
Lens cap (1)
Lens cap strap (1)
CD-ROM (SPVD-004 USB Driver) (1)
Operating instructions (1)

Design and specifications are subject to change without notice.

The indicators during recording



1 **Sharpness indicator**

2 **Focus mode indicator/Macro indicator**

3 **Battery remaining indicator**

4 **Flash level indicator/Flash mode indicator**

5 **PROGRAM AE indicator/Zoom indicator**

6 **White balance indicator**

7 **SteadyShot indicator**

8 **Picture effect indicator**

9 **DATE indicator**

10 **EV level indicator**

11 **Iris/Shutter speed indicator**

12 **AE lock indicator/Focus lock indicator**

13 **Recording mode/Clip Motion indicator**

14 **Image size indicator**

15 **Number of recorded images**

16 **Remaining disk capacity/ Remaining memory capacity indicator**

: Floppy disk

: "Memory Stick"

17 **Recording time indicator**

18 **Self-diagnosis function indicator/Recording time indicator**

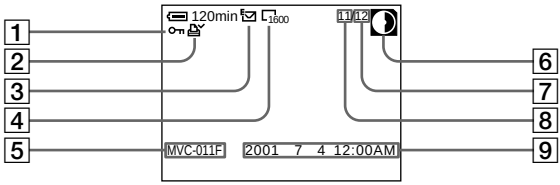
19 **Self-timer indicator**

20 **Spot light-metering indicator**

21 **Menu bar and guide menu**

They appear by pressing ▲ on the control button and disappear by pressing ▼.

The indicators during still image playback



1 **Protect indicator/Zoom scaling indicator**

2 **Print mark indicator**

3 **Recording mode/Clip Motion indicator**

4 **Image size indicator**

5 **File name***

6 **Remaining disk capacity/Remaining memory capacity indicator**

: Floppy disk

: "Memory Stick"

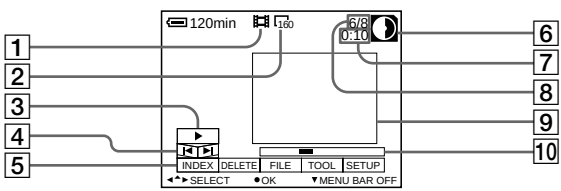
7 **Number of stored images on a floppy disk or "Memory Stick"**

8 **Image number**

9 **Recording date of the playback image***

* When the menu bar is displayed, this indicator disappears from the screen.

The indicators during moving image playback



1 **Moving image file indicator**

2 **Image size indicator**

3 **Playback button/pause button**

▶ is displayed during stop, and ❚❚ during playback.

4 **Image searching buttons**

5 **Menu bar and guide menu**

6 **Remaining disk capacity/Remaining memory capacity indicator**

: Floppy disk

: "Memory Stick"

7 **Counter**

8 **Image number/number of stored images on a floppy disk or "Memory Stick"**

9 **Playback image**

10 **Playback bar**

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Printed on recycled paper

Printed using vegetable oil ink with less than 1% VOC (Volatile Organic Compound).

http://www.world.sony.com/

Sony Corporation Printed in Japan

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